EMERGENCIAS Pediátricas

(ENGLISH EDITION)

Vol. 3 | No. 2 | 2024

ergon

SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas

Vol. 3. No. 2. May - August 2024

EDITORIAL BOARD

Edit:
ergon
C/ Arboleda, 1. 28221 Majadahonda (Madrid)

Electronic ISSN: 3020-8661

Free access to full content in both societies websites:
https://www.seup.org
https://www.slepeweb.org

Secretaría Técnica:
ERGON®. Revista de Emergencias Pediátricas.
C/ Berruguete, 50. 08035 Barcelona
Teléfono: 93 274 94 04
E-mail: carmen.rodriguez@ergon.es

The EMERGENCIAS PEDIÁTRICAS magazine is the scientific diffusion body of the Spanish Society of Pediatric Emergencies and the Latin American Society of Pediatric Emergencias. The Editorial Committee, aware of the plurality and value that this collaboration brings, considers it is essential to respect the different modes of expression of the Spanish language in accordance with the general rules of a scientific article.

Cover design: Gemma Fernández y Carlos Fábrega. *Servei Mitjans Audiovisuals. Hospital Sant Joan de Déu. Barcelona.*

SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas

Vol. 3. No. 2. May - August 2024

Summary / *Sumario*

SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas

Vol. 3. No. 2. May - August 2024

SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas
Vol. 3. No. 2. May - August 2024

Emerg Pediatr. 2024; 3(2): 61-62

EDITORIAL

Improvement methodology. One more step towards quality care

Carles Luaces Cubells

Editor-in-Chief Emergencias Pediátricas. Member of the SLEPE Quality Group. Coordinator of the SEUP Quality Improvement Group. Hospital Sant Joan de Déu. Barcelona, Spain

The Institute of Medicine (IOM) defines the quality of health services as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge." This and other definitions share the view that the quality of healthcare is a complex and multidimensional concept, encompassing components or dimensions such as effectiveness, efficiency, user satisfaction, accessibility, appropriateness, and professional competence.

Although the ultimate aim of medicine is to meet the medical needs of the patient, it should also take into account the expectations of the family, healthcare providers, institutions, and society in general. Quality of care has gradually become the cornerstone of healthcare, and after the publication of the report "To Err is Human" in the USA, concern about the adverse effects of healthcare has increased enormously. In recent years, patient safety has become more important as one of the key dimensions of quality. This interest is even more evident in pediatric emergency medicine due to its social and economic impact.

Similarly, WHO defines quality care as "that which identifies the health needs (educational, preventive, curative, and maintenance) of individuals or populations in a comprehensive and accurate manner and allocates resources (human and other) to these needs in a timely manner and as effectively as the current state of knowledge permits."

As early as 2004, the Spanish Society of Pediatric Emergency Medicine (SEUP), with the aim of providing a tool to evaluate and monitor the quality of care, published the first edition of Pediatric Indicators to measure the quality criteria of healthcare. A second revised and updated edition was published in 2018, and it is currently being continually updated based on real-life evaluation of some of the empirically defined standards.

Fortunately, the commitment to provide the best care for our patients and their families does not waver; therefore, in this issue of Emergencias Pediátricas, Dr. Javier González del Rey and Dr. Gisella Valderrama describe the Interactive Course on Improvement Methodology that was initiated in Latin America and will soon be started in Spain. As the authors write, " Improvement methodology has taken on a key role in healthcare. Quality improvement initiatives can involve a wide range of activities, from implementing evidence-based practices to improving patient safety and satisfaction."

The main objective of this course is to break down barriers and promote education to provide quality care to pediatric patients in the emergency department. In addition to acquiring knowledge in improvement methodology, leadership, and psychology of change, key tools for implementing an improvement project will be taught.

Undoubtedly, this new initiative will provide pediatric emergency physicians with concepts and skills needed to pursue excellence in our daily work, which involves curing and caring for the patients and families who place their trust in us. We therefore owe our gratitude to Dr. Javier González del Rey and Dr. Gisella Valderrama for their generosity in sharing their time and knowledge by teaching this interesting Interactive Course on Improvement Methodology.

Received on June 3, 2024
Accepted on June 3, 2023

Corresponding author:
Dr. Carles Luaces
E-mail: carlos.luaces@sjd.es

REFERENCES

1. Institute of Medicine. Crossing the quality chasm: the IOM health care quality initiative, 2001 [en línea] [consultado el 18/02/2018]. Disponible en: http://www.nationalacademies.org/hmd/Global/News Announcements/Crossing-the-Quality-Chasm-The-IOM-Health-Care-Quality-Initiative.aspx
2. Kohn LT, Corrigan JM, Donaldson ML, eds. To Err Is Human: Building a Safer Health System. [monografía en Internet]. Washington DC: National Academy Press, 2000. Disponible en: http://www.nap.edu/catalog/9728.html.

3. Indicadores pediátricos para medir los criterios de calidad de la atención sanitaria. Grupo de trabajo de Indicadores de Calidad de la Sociedad Española de Urgencias de Pediatría; 2004.
4. Indicadores de Calidad SEUP. 2018. 2ª ed. Grupo de trabajo de Seguridad y Calidad. Disponible en: http://seup.org

SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas
Vol. 3. No. 2. May - August 2024

Emerg Pediatr. 2024; 3(2): 63-68

ORIGINAL

Experience of healthcare providers as second victims in a Pediatric Emergency Department

Vanessa Arias Constantí[1,2], Mireia Urrea Ayala[3], Inés Dalmau Pons[4,6], Mónica Inchuste Grassi[5], Carles Luaces Cubells[1,2,6], Victoria Trenchs Sainz de la Maza[1,2,6]

[1]Environmental Impact on the Well-Being of Children and Adolescents. Institut de Recerca Sant Joan de Déu. Esplugues de Llobregat, Barcelona, Spain. [2]Emergency Department; [3]Department of Clinical Safety, Direction of quality and patient experience; [4]Joint Prevention Service; [5]Direction of People and Values. Hospital Sant Joan de Déu. Esplugues de Llobregat, Barcelona, Spain. [6]Universidad de Barcelona. Barcelona

Received on October 19, 2023
Accepted on November 29, 2023

Key words:

Second victim
Adverse event
Safety
SVEST

Palabras clave:

Segunda víctima
Evento adverso
Seguridad
SVEST

Abstract

Objectives: To evaluate the emotional impact on healthcare providers of a Pediatric Emergency Department (PED) involved in an adverse event (AE) and to analyze the effects of the experience and the support received/desired.

Methods: A survey including the Second Victim Experience and Support Tool (SVEST) questionnaire was sent to 180 healthcare providers working in the PED in 2022.

Results: We received 67 (37.2%) responses. Among the respondents, 35 (52.2%) participants had experienced an AE. The highest mean scores on the SVEST were observed in the dimensions of "diminished professional self-efficacy" (3.3), "inadequate institutional support" (2.7), and "psychological distress" (2.6); for the outcome variable, "turnover intentions" (2.5); and for the desired support resources, "An employee assistance program" (4.1).

Conclusions: AEs are common occurrences in PEDs and affected half of the respondents. Healthcare providers often experience a loss of self-confidence, feelings of depression and ineffectiveness, and may consider changing their profession. They would require more institutional and peer support.

EXPERIENCIA DE LOS PROFESIONALES SANITARIOS COMO SEGUNDAS VÍCTIMAS EN UN SERVICIO DE URGENCIAS PEDIÁTRICAS

Resumen

Objetivos: *Evaluar el impacto emocional de los profesionales de un Servicio de Urgencias Pediátricas (SUP) involucrados en un evento adverso (EA), analizar el impacto de la experiencia y el apoyo recibido/deseado.*

Métodos: *Se envió una encuesta que incluía el cuestionario* Second Victim Experience and Support Tool *(SVEST) a 180 profesionales del SUP en 2022.*

Resultados: *Se obtuvieron 67 (37,2%) respuestas. Treinta y cinco (52,2%) participantes habían experimentado un EA. Las puntuaciones medias más altas del SVEST fueron para las dimensiones "autoeficacia profesional disminuida" (3,3), "apoyo institucional inadecuado" (2,7) y "malestar psicológico" (2,6); para la variable de resultado, "intención de rotación" (2,5), y para las opciones de apoyo deseadas, "Un programa de asistencia al empleado" (4,1).*

Conclusiones: *Los EA son frecuentes en los SUP afectando a la mitad de los encuestados. Los profesionales pierden la confianza en sí mismos sintiéndose deprimidos e ineficaces, consideran cambiar su profesión, y les gustaría más apoyo institucional y de los compañeros.*

Corresponding author:
Dra. Vanessa Arias Constanti.
Área de Urgencias. Hospital Sant Joan de Déu. Passeig Sant Joan de Déu 2. 08940 Esplugues de Llobregat, Barcelona. España.
E-mail: vanessa.arias@sjd.es

INTRODUCTION

The risk of adverse events (AE) is particularly high in the PED, mainly due to the type of the care provided in these settings[1,2]. AEs are usually analyzed in terms of the consequences for the patient, while the impact on the healthcare provider, who is ultimately also a victim, is underestimated. In 2000, Wu[3] defined the term second victim (SV), with Scott[4] in 2009 further examining this concept and defining it as a "healthcare provider who is involved in an unanticipated adverse patient event, medical error and/or patient-related injury and becomes a victim in the sense that the provider is traumatized by the event." Those who have encountered such situations firsthand are acutely aware of the negative emotional aftermath, which can impede their ability to perform effectively, leading to feelings of guilt or inadequacy. In severe cases, this emotional distress may even prompt drastic decisions such as leaving the profession.

The next essential step in patient safety research involves examining the response of healthcare professionals following incidents and determining the extent of their involvement in the process. However, assessing the prevalence of second victimization (SV) is complex. In Spain, a multicenter study revealed that 72% of healthcare workers surveyed felt they were an SV[5], yet specific data for EDs, particularly PEDs, are lacking. The primary objective of this study was to determine the number of PED healthcare providers who were at some point involved in an AE and to analyze its emotional impact, as well as the changes it entailed in their clinical practice. The secondary objectives were to assess knowledge of and participation in the safety training program and the SV support program and the support options received and desired.

MATERIALS AND METHODS

A descriptive survey study was conducted in a third level maternity and children's hospital with an average of 110,000 PED visits per year. The institution has a Safety Training Program and an SV Support Program. In February 2022, an email was sent to all 180 PED healthcare providers (77 physicians and 103 nurses/auxiliary nursing care technicians) inviting them to participate in the study. Those who agreed to participate answered the survey anonymously using the Google Forms® platform following the recommendations of the Checklist for Reporting Results of Internet E-Surveys (CHERRIES). The survey (Appendix 1) was structured into six sections:

1. Socio-demographic and professional data.
2. Patient safety culture.
3. Previous experience with an AE in the last 5 years.
4. Psychological and physical impact of an AE on the individual involved.
5. Support received and subsequent changes in daily clinical practice.
6. Type of support desired.

The first section was created ad-hoc to collect data on different variables (sex, age, etc.). The second was based on the Spanish National Project on SV[6,7] and assessed knowledge of patient safety. Sections 4-6 were extracted from the Second Victim Experience and Support Tool (SVEST)[8] survey instrument validated in Spanish. The SVEST consists of 29 items grouped into 9 subscales: 7 dimensions and 2 outcome variables (turnover intentions and absenteeism). Of the dimensions, 3 measure the trauma of the SV (psychological distress, physical distress, impact on professional self-efficacy) and 4, support sources (colleagues, supervisors, institutional support, non-work-related support). The response indicates the degree of agreement with each item (Likert scale: 1 = strongly disagree to 5 = strongly agree). The SVEST items were scored according to the study by Burlison *et al.*[9]. For each respondent, the mean of the specific items of each dimension or outcome variable was defined after converting the responses of reverse-worded items (whose wording implied that the higher the score, the less SV experience, e.g., perceived support). The mean scores were calculated for respondents who answered more than 50% of the specific items of that dimension or outcome variable[9].

Using the mean scores for each respondent, the overall mean and standard deviation were calculated for each dimension and outcome variable, and the number and percentage of respondents with a mean score of 4 or higher were identified. The last part of the survey included seven additional items assessing desired support options following participation in an EA. Each option was rated on a Likert scale of 1 to 5 (1 = little desired, 5 = very desired), where a response of 4 or 5 indicated that the support option was desired.

The study was approved as a quality improvement and patient safety project.

RESULTS

Sixty-seven (37.2%) responses were obtained (medical staff response rate 61.0%; nursing staff response rate 19.4%). Thirty-three (49.3%) were younger than 30 years, 28 (41.8%) were between 30 and 50 years, and the remaining 6 (9%) were older than 50 years. Fifty-five (82.1%) were female, 47 (70.2%) were physicians, and 39 (58.2%) had 10 or fewer years of professional experience. In terms of safety culture, 42 respondents (62.7%) were aware of and participated in the safety training program and 28 (41.8%) participated in the SV support program. Thirty-five (52.2%) participants had been involved in an AE within the last 5 years. Table 1 shows the results for the SVEST dimensions, outcomes, and desired support resources.

DISCUSSION

In our study, half of the professionals who participated in the survey had been involved in an AE, which had caused significant emotional distress and potentially affected their daily clinical practice. A significant proportion reported a loss of confidence in their professional competencies. Most participants were young and had few years of work experience in the PED. This professional profile is consistent with the results of other surveys[10,11], except for the professional profile where most participants were nurses. In our sample, a significant number of respondents were physicians in training, who

TABLE 1. Results for the different dimensions and outcomes variables and desired support options (n= 35).

SVEST dimensions and outcomes[1]	Number (%) and mean ≥ 4 points	Media (DE)
Dimensions[2]		
Psychological Distress	0/35 (0%)	2.6 (0.5)
Physical Distress	4/35 (11.4%)	2.4 (1.1)
Colleague Support	0/35 (0%)	2.3 (0.5)
Supervisor Support	1/35 (2.9%)	2.2 (0.6)
Institutional Support	6/31 (19.4%)	2.7 (0.8)
Non-Work-Related Support		1.9 (0.7)
Professional Self-Efficacy	15/34 (44.1%)	3.3 (1.2)
Outcomes[3]		
Turnover Intentions	6/34 (17.6%)	2.5 (1.0)
Absenteeism	1/34 (2.9%)	1.6 (0.8)
Support options[4]	**Deseado, n (%)**	**Media (DE)**
The ability to immediately take time away from my unit for a little while	15/34 (44.1%)	3.2 (1.2)
A specified peaceful location that is available to recover and recompose after one of these types of events	25/34 (73.5%)	3.7 (1.0)
A respected peer to discuss the details of what happened	29/35 (82.9%)	4.0 (0.7)
An employee assistance program	29/35 (82.9%)	4.1 (0.9)
A discussion with my manager or supervisor about the incident	27/34 (79.4%)	4.0 (0.7)
The opportunity to schedule a time with a counselor at my hospital to discuss the event	25/34 (73.5%)	3.9 (0.9)
A confidential way to get in touch with someone 24 hours a day to discuss how my experience may be affecting me	19/34 (55.9%)	3.6 (1.1)

SVEST: Second Victim Experience and Support Tool.
[1]The score of the respondents for each dimension or outcome was defined as the mean of 2 to 4 items, each rated on a 5-point scale (1= strongly disagree and 5= strongly agree). Results are presented for respondents who answered more than 50% of the items for a specific dimension or outcome (e.g., ≥ 3 of 4 items, ≥ 2 of 3 items, or both of 2 items).
[2]A higher score for each specific dimension represents experiencing more psychological and physical distress, decreased professional self-efficacy, and a greater perception of inadequate support.
[3]A higher score represents more intentions to change jobs and more absenteeism.
[4]The responses for these items are rated on a 1–5 Likert scale, where a response of 4 or 5 represents the support option being desired.

are generally more interested in participating in this type of study[11]. We noted the low response rate from more experienced professionals, who a priori have more responsibility in the organization and are more involved in patient safety. This low response rate may be due to a lack of motivation and professional burnout, which sometimes leads them to participate less in such studies.

Half of the respondents had been involved in an AE, the impact of which was mainly manifested in decreased professional self-efficacy (feelings of incompetence), inadequate institutional support, psychological distress, and increased intention to change jobs. These findings are consistent with other studies conducted both in our environment and in other areas. Although it is a subjective experience, traumatic events are experienced in a similar way regardless of the environment, personality, working conditions, or environmental factors[12]. In addition to the widely studied psychological distress, it is important to assess other dimensions such as physical suffering and loss of professional self-efficacy, which may be equally affected and should be considered in the approach to the SVs[13].

When analyzing the items regarding desired support options, respondents considered it most important to have an SV support program. It should be noted that about 40% of the 65 respondents were unaware of the AE training and notification program (included in the center's safety plan) and 60% were unaware of the existing SV support program at the study center. Given that a negative correlation has been found between perceived support and psychological and occupational outcomes for SVs[10,12], greater dissemination of the program is essential to improve adherence and participation of professionals. However, independently of the adequacy of the support programs for SV, it should be noted that the first barrier to overcome is reluctance to ask for help[14]. It is necessary to change the safety culture, with a proactive attitude towards the professionals involved in an AE. In addition, training in psychological first aid is necessary to reduce the consequences of an AE for the healthcare provider[15].

The limitations of this study include those inherent to survey-based studies and the fact that it was conducted in a tertiary hospital with a high rate of trainees, which may make it difficult to extrapolate our findings.

In conclusion, half of the respondents may have suffered the consequences of being involved in an AE. Many of the affected professionals lose self-confidence and feel depressed and ineffective in the performance of their work, have considered changing jobs, and would like to have more institutional and peer support. Consequently, this need for support to SVs should be emphasized; it is essential to invest in support resources and to disseminate the programs to all professionals in the institution. It is to be hoped that the positive impact of these measures will benefit the professional, the institution, and the patients themselves, who are the main focus of our care.

REFERENCES

1. Pérez-Díez C, Real-Campaña JM, Noya-Castro MC, Andrés-Paricio F, Reyes Abad-Sazatornil M, Bienvenido Povar-Marco J. Errores de medicación en un servicio de urgencias hospitalario: estudio de situación para mejorar la seguridad de los pacientes. Emergencias. 2017; 29(6): 412-5.
2. Beteta Fernández D, Pérez Cánovas, Alcaraz Martínez J. Incidentes ligados a la asistencia en los Servicios de Urgencias Pediátricas. Estudio multicéntrico. Emerg Pediatr. 2022; 1(2): 119-20.
3. Wu AW. Medical error: the second victim. The doctor who makes the mistake needs help too. BMJ. 2000; 320(7237): 726-7.
4. Scott SD, Hirschinger LE, Cox KR, McCoig M, Brandt J, Hall LW. The natural history of recovery for the healthcare provider "second victim" after adverse patient events. Qual Saf Health Care. 2009; 18(5): 325-30.
5. Mira JJ, Carrillo I, Lorenzo S, Ferrús L, Silvestre C, Pérez-Pérez P, et al. The aftermath of adverse events in Spanish primary care and hospital health professionals. BMC Health Serv Res. 2015; 15: 151.
6. Carrillo I, Ferrús L, Silvestre C, Pérez-Pérez P, Torijano M, Iglesias-Alonso F, et al. Propuestas para el estudio del fenómeno de las segundas víctimas en España en atención primaria y hospitales. Rev Calid Asist. 2016; 31 Suppl 2: 3-10.
7. Cuestionario para profesionales de hospitales. Proyecto de investigación de segundas y terceras víctimas. Disponible en: https://www.segundasvictimas.es/data/documentos/PROFESIONALES_HOSPITAL.pdf.
8. Santana-Domínguez I, González-de la Torre H, Martín-Martínez A. Cross-cultural adaptation to the Spanish context and evaluation of the content validity of the Second Victim Experience and Support Tool (SVEST-E) questionnaire. Enferm Clin (Engl Ed). 2021; 31(6): 334-43.
9. Burlison JD, Scott SD, Browne EK, Thompson SG, Hoffman JM. The Second Victim Experience and Support Tool: Validation of an Organizational Resource for Assessing Second Victim Effects and the Quality of Support Resources. J Patient Saf. 2017;1 3(2): 93-102.
10. Finney RE, Czinski S, Fjerstad K, Arteaga GM, Weaver AL, Riggan KA, et al. Evaluation of a Second Victim Peer Support Program on Perceptions of Second Victim Experiences and Supportive Resources in Pediatric Clinical Specialties Using the Second Victim Experience and Support Tool (SVEST). J Pediatr Nurs. 2021; 61: 312-7.
11. Magaldi M, Perdomo JM, López-Baamonde M, Chanzá M, Sanchez D, Gomar C. Second victim phenomenon in a surgical area: online survey. Rev Esp Anestesiol Reanim. 2021; 68(9): 504-12.
12. Santana-Domínguez I, González-De La Torre H, Verdú-Soriano J, Berenguer-Pérez M, Suárez-Sánchez JJ, Martín-Martínez A. Feelings of being a second victim among Spanish midwives and obstetricians. Nurs Open. 2022; 9(5): 2356-69.
13. Torbenson VE, Riggan KA, Weaver AL, Long ME, Finney RE, Allyse MA, et al. Second Victim Experience among OBGYN Trainees: What Is Their Desired Form of Support? South Med J. 2021; 114(4): 218-22.
14. Mallea Salazar F, Ibaceta Reinoso I, Vejar Reyes C. Segundas víctimas: calidad de soporte percibido y su relación con las consecuencias del evento adverso. J Healthc Qual Res. 2022; 37(2): 117-24.
15. Finney RE, Jacob A, Johnson J, Messner H, Pulos B, Sviggum H. Implementation of a Second Victim Peer Support Program in a Large Anesthesia Department. AANA J. 2021; 89(3): 235-44.

APPENDIX 1. Second Victims Survey.
Sociodemographic data (age, sex, professional category, professional experience, shift)
With respect to the last 5 years, please indicate the answer that best reflects your personal experience *Please rate according to the following scale:* *1: Strongly disagree; 2: Disagree; 3: Neither agree nor disagree; 4: Agree; 5: Strongly agree*
At my hospital...
1. There is an annual patient safety training program that operates at different levels: awareness and specific training (workshops or courses).
2. There is an anonymous incident and adverse event (AE) reporting system that allows us to collect useful information to avoid risks to patients.
3. When an AE with serious consequences for a patient is detected, we always analyze its causes and how to avoid it in the future (we systematically learn from our experience).
4. Most of the AEs I know of are due to organizational factors, not human error.
5. Most AEs with serious consequences are preventable.
6. Healthcare providers involved in an AE receive, if they wish, psychological support from the hospital to reduce the distress they suffer as a second victim.
7. I have received training in how to communicate an adverse event to a patient.
8. When a medical error occurs that affects the patient, the patient or the patient's family is always notified.
9. Notifying patients of an AE that has no relevant impact on their treatment causes unnecessary alarm.
10. Notifying a patient of an AE can provoke a negative reaction that affects their subsequent relationship with their healthcare providers.
11. When a serious AE occurs, the healthcare provider involved receives support from his/her own team.
Have you ever experienced a safety incident? Yes / No
On the experience of second victims after having suffered an AE and the available means of support *Rate according to the scale:* *1: Strongly disagree; 2: Disagree; 3: Neither agree nor disagree; 4: Agree; 5: Strongly agree*
1.1. I have experienced embarrassment from these instances.
1.2. My involvement in these types of instances has made me fearful of future occurrences.
1.3. My experiences have made me feel miserable.
1.4. I feel deep remorse for my past involvements in these types of events.
2.1. The mental weight of my experience is exhausting.
2.2. My experience with these occurrences can make it hard to sleep regularly.
2.3. The stress from these situations has made me feel queasy or nauseous.
2.4. Thinking about these situations can make it difficult to have an appetite.
3.1. I appreciate my coworkers' attempts to console me, but their efforts can come at the wrong time.
3.2. Discussing what happened with my colleagues provides me with a sense of relief.
3.3. My colleagues can be indifferent to the impact these situations have had on me.
3.4. My colleagues help me feel that I am still a good healthcare provider despite any mistakes I have made.
4.1. I feel that my supervisor treats me appropriately after these occasions.
4.2. My supervisor's responses are fair.
4.3. My supervisor blames individuals.
4.4. I feel that my supervisor evaluates these situations in a manner that considers the complexity of patient care practices.
5.1. My organization understands that those involved may need help to process and resolve any effects they may have on care providers.
5.2. My organization offers a variety of resources to help me get over the effects of involvement with these instances.
5.3. The concept of concern for the well-being of those involved in these situations is not strong at my organization.
6.1. I look to close friends and family for emotional support after one of these situations happens.
6.2. The love from my closest friends and family helps me get over these occurrences.

.../...

APPENDIX 1 (Cont.). Second Victims Survey.	
7.1.	Following my involvement, I experienced feelings of inadequacy regarding my patient care abilities.
7.2.	My experience makes me wonder if I'm not really a good healthcare provider.
7.3.	After my experience, I became afraid to attempt difficult or high-risk procedures.
7.4.	These situations don't make me question my professional abilities.
8.1.	My experience with these events has led to a desire to take a position outside of patient care.
8.2.	Sometimes the stress from being involved with these situations makes me want to quit my job.
9.1.	My experience with an adverse patient event or medical error has resulted in me taking a mental health day.
9.2.	I have taken time off after one of these instances occurs.
10.1.	The ability to immediately take time away from my unit for a little while.
10.2.	A specified peaceful location that is available to recover and recompose after one of these types of events.
10.3.	A respected peer to discuss the details of what happened.
10.4.	An employee assistance program that can provide free counseling to employees outside of work.
10.5.	A discussion with my manager or supervisor about the incident.
10.6.	The opportunity to schedule a time with a counselor at my hospital to discuss the event.
10.7.	A confidential way to get in touch with someone 24 hours a day to discuss how my experience may be affecting me.

SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas
Vol. 3. No. 2. May - August 2024

Emerg Pediatr. 2024; 3(2): 69-74

ORIGINAL

Addressing a challenge: Methods of urine collection in pre-continent children

Mireia Garcia Santos[1], Roberto Velasco Zúñiga[2,3], Ana Isabel Martín García[1], Sandra Bustamante Hernández[1], Elena May Llanas[1]

[1]Hospital Universitario MutuaTerrassa. Terrassa, Barcelona. [2]Pediatric Emergency Department. Hospital Universitari Parc Taulí. Institut d'Investigació i Innovació Parc Taulí (I3PT). Sabadell, Barcelona. [3]Paediatrics & Child Health Department. University College Cork. Cork, Irlanda

Received on October 30, 2023
Accepted on November 29, 2023

Key words:
Urinary tract infection
Pediatrics
Clean-catch
Urine sampling

Palabras clave:
Infección tracto urinario
Pediatría
Clean-catch
Recogida orina

Abstract

Introduction: Urinary tract infection (UTI) is a common infection occurring in childhood seen at pediatric emergency departments, and obtaining a sterile urine sample is essential for diagnosis. However, acquiring such samples in pre-continent children poses a challenge, and there are several collection methods with different advantages and limitations. Clinical practice guidelines differ in their recommendations for urine collection methods in clinically stable, pre-continent children.

Objectives: To describe contamination rate of the clean-catch method in this population.

Methodology: Observational, retrospective, and descriptive study including urinary samples from hemodynamically stable children aged 0-24 months. Demographic and therapeutic variables were assessed.

Results: A total of 288 samples were collected using the clean-catch method, with a contamination rate of 15.3% (14.7% in boys vs. 15.7% in girls). Interestingly, a decrease in contamination rates was observed with increasing age; 45% of the contaminated samples were from children under 3 months old, with 60% of these belonging to girls (p= 0.3). The differences in contamination rates between those under 3 months and the rest of the sample were statistically significant (OR 1.97, 95% CI 1.02-3.78).

Conclusions: According to this study, contamination rates through the clean-catch collection method are significantly higher in children under 3 months compared to older children, suggesting that this method may not be suitable for this age group. However, this collection method may be acceptable in children older than 3 months who are hemodynamically stable and suspected of having UTI.

ABORDANDO UN RETO: MÉTODOS DE RECOGIDA DE ORINA EN NIÑOS NO CONTINENTES

Resumen

Introducción: *La infección del tracto urinario (ITU) es una patología frecuente en Urgencias Pediátricas y se precisa una muestra de orina estéril para su diagnóstico. Su obtención en niños precontinentes supone un reto y existen varios métodos de recogida con distintas ventajas y limitaciones. Las guías de práctica clínica son heterogéneas en sus recomendaciones sobre el método de recogida de orina en los niños precontinentes clínicamente estables.*

Corresponding author:
Dra. Mireia Garcia Santos
E-mail: mireiagarcias@mutuaterrassa.cat

Objetivos: *Describir la tasa de contaminación de la recogida "al acecho" en esta población.*

Metodología: *Estudio observacional, retrospectivo y descriptivo incluyendo muestras urinarias de niños de 0-24 meses, hemodinámicamente estables. Se recogen variables demográficas y terapéuticas.*

Resultados: *Se obtienen 288 muestras mediante recogida "al acecho" con el 15,3% de tasa de contaminación (14,7% niños* vs. *15,7% niñas). Se observa que la tasa de contaminación disminuye a medida que aumenta la edad y se encuentra que el 45% de las muestras contaminadas corresponden a menores de 3 meses, siendo el 60% de estas procedentes de niñas. Las diferencias entre las tasas de contaminación de los menores de 3 meses comparado con el resto de la muestra sí fueron significativas (OR 1,97, IC95% 1,02-3,78).*

Conclusiones: *Según este estudio, en menores de 3 meses la contaminación mediante recogida "al acecho" es significativamente superior que en niños mayores, por lo que este método podría no ser adecuado en esta franja de edad. Sin embargo, podría ser un método de recogida aceptable en niños mayores de 3 meses, hemodinámicamente estables con sospecha de ITU.*

INTRODUCTION

Urinary tract infection (UTI) is one of the most common infections in childhood, and it is the leading bacterial infection in children presenting with fever without an apparent source[1]. UTI accounts for 5.9% of pediatric consultations in primary care, increasing to 7.3% when considering children under 3 years of age[2]. In infants under 24 months old with fever, its prevalence reaches 7%[3]. However, the clinical presentation in younger children is often nonspecific and should be suspected in an infant with fever without source, vomiting, irritability, or reduced feeding. The timely diagnosis of UTI has significant implications for the child as delayed initiation of treatment may result in complications, including kidney injury or sepsis.

Although urine sediment examination or dipstick results can guide clinical decisions and treatment initiation, the definitive diagnosis of UTI is based on a positive urine culture result. Therefore, the collection of a sterile urine sample is required and, especially in pre-continent children, this can be a challenge in clinical practice. Obtaining poor quality samples can lead to misdiagnosis, unnecessary testing, and inappropriate antibiotic therapy.

Several urine collection strategies are available, each with different advantages and limitations, including noninvasive methods, such as the perineal urine bag and clean-catch collection, as well as invasive methods, such as suprapubic aspiration or bladder catheterization. Table 1 provides a summary of the characteristics of these urine collection methods.

In general, noninvasive methods require more time to obtain the sample and have higher contamination rates. On the other hand, invasive methods, while minimizing false positives, require more clinical experience to perform the techniques, are painful for children, and may cause complications such as urinary tract injury or secondary infections.

In terms of economic cost, a study conducted at an Australian center found that bladder catheterization is the most cost-effective method for pre-continent children. Among non-invasive methods, the clean-catch method was identified as the most cost-effective. In this study, the most significant determinant of cost was time occupying a hospital bed[4].

Different authors propose the clean-catch collection as the method of choice for stable pre-continent children. The technique is easy to perform and non-invasive, with contamination rates similar to bladder catheterization, and is even suggested to be equivalent to the mid-stream urine sample in continent patients[5,6].

According to one study, the clean-catch collection method was successful in 74% of cases with a mean sample collection time of 30 minutes (IQR 11-66 minutes), and a 'missed' first sample in 16% of cases. No differences were found in the contamination rates according to the time taken to obtain the sample, but they were higher in girls (41%) than in boys (29%), especially in children under 6 months of age[7].

In younger infants, the Quick-Wee method can be used, which consists of gently rubbing the suprapubic area in circles with a cold saline-soaked gauze to stimulate micturition. Using this method, 31% of infants aged 1-12 months voided in less than 5 minutes[8].

We reviewed various clinical guidelines and consensus statements updated within the last 10 years on the diagnosis of UTI in the pediatric population.

- All guidelines agree that a urine sample collected in a bag can be used to rule out UTI, but in case of a positive result, this sample should not be submitted for urine culture because of its high contamination rate and a new sample should be collected by another method.
- In unstable or critically ill children, all guidelines agree that the method of collection should be invasive (bladder catheterization or suprapubic aspiration).
- Clean-catch collection is considered acceptable for urine culture analysis by all guidelines, except for those from the United States. According to guidelines from Canada, Switzerland (for children older than 3 months), Australia, and the United Kingdom, clean-catch collection is the method of first choice for pre-continent and clinically stable children.

TABLE 1. Summary of urine collection methods in pre-continent children.

	Non-invasive		Invasive	
	Urine bag	**Clean-catch**	**Catheterization**	**Suprapubic aspiration**
Procedure	A sterile bag is placed over genitals to collect urine	Wait until the child voids spontaneously and the sample is collected in a sterile container	Insertion of urethral catheter, which is removed when the sample is obtained	Insertion of a needle into the bladder to aspirate urine
Advantages	Useful to rule out UTI if the result is negative[9]	Least contamination in non-invasive method. Stimulation methods in infants may increase success	Low contamination. Good collection success rate	Very low contamination. May be performed with ultrasound-guidance
Limitations	High contamination. Not suitable for culture	Time-consuming. Missed samples	Invasive and painful. Equipment and expertise required	Most invasive and painful method. Equipment and expertise required
Contamination rate[10]	18-88% (mean 48%)	4.5-27% (mean 20%)	8-28% (mean 15%)	1-9% (mean 4%)
Cost in British pounds (£)[11]	112£	52-65£	49£	52£

The recommendations of the guidelines and consensus statements reviewed in this article are summarized in Table 2.

The objectives of this study were to describe the contamination rate of urine cultures collected by the clean-catch method in pre-continent children under 2 years of age and to analyze whether there are differences in contamination rates according to sex and age in this population.

MATERIALS AND METHODS

An observational, descriptive, and retrospective study was conducted in the emergency department of a secondary-care hospital (Hospital Universitari Mutua Terrassa, Barcelona) between january 1 and december 31, 2022.

For this study, electronic discharge summaries were reviewed and the variables age, sex, collection method, and urine culture results (positive/negative/contaminated) were recorded.

Hemodynamically stable children aged 0 to 24 months who visited the Emergency Department of our center with clinical manifestations compatible with UTI were included. Children with urogenital malformations were excluded.

A urine study was indicated for patients presenting with fever without a source persisting for more than 24 hours, accompanied by irritability and/or urinary symptoms. The preferred method for urine collection was the clean-catch technique.

Contaminated urine cultures were defined as those showing growth of different types of bacteria, while samples were considered UTI positive if there was growth of $>10^5$ CFU/mL of a single uropathogen when urine was collected using the clean-catch method and $>10^4$ CFU/mL in samples collected via bladder catheterization.

Regarding statistical analysis, quantitative variables were expressed as measures of central tendency and dispersion, with their normality assessed using the Kolmogorov-Smirnov test. Categorical variables were expressed as percentages. Qualitative variables were compared using the χ^2 test. A significance level of 0.05 was used in all comparisons. There was no conflict of interest.

RESULTS

A cohort of 298 patients was analyzed, with a non-normal distribution according to the statistical analysis. The median age was 0.58 years (7 months) with an interquartile range of 0.84. Overall, 59.7% were girls and 40.3% boys. Regarding age distribution, 32% of patients were under 3 months, 16.4% were between 3 and 6 months, 28% were between 6 and 12 months, and 23.6% were older than 1 year, as illustrated in Figure 1.

Urine was collected via bladder catheterization in only 5 patients, with no contaminated urine cultures detected. However, the sample size was too small for statistical analysis.

In the remaining cases (n= 293), urine was collected using the clean-catch method showing a total contamination rate of 15.3%. There were no significant differences in sample contamination rates between male (14.7%) and female (15.7%) patients (p= 0.8), with a prevalence ratio (PR) of 1.03.

The sample was stratified by age and the corresponding contamination rates are shown in Table 3.

It was observed that the overall rate of contaminated samples decreased with increasing patient age, although this trend did not reach statistical significance (p= 0.19). Forty-five percent of the contaminated samples were from children under 3 months of age, with 60% of these samples coming from girls. However, this difference was not statistically significant (p= 0.3). Conversely, the difference in contamination rates between children younger than 3 months and those older than 3 months was statistically significant (OR 1.97, 95%CI 1.02-3.78).

TABLE 2. Summary of clinical practice guideline recommendations.

Guideline/Consensus	Country/region	Year	Recommendations
Reaffirmation of AAP clinical practice guideline: the diagnosis and management of the initial urinary tract infections in febrile infants and young children 2-24 months[12]	US	2016	• The specimen needs to be obtained through catheterization (discarding the first drops of urine to avoid contamination) or suprapubic aspiration, indistinctly • Urine collected in a bag or via a clean-catch method is only suitable for urinalysis and if positive, a sterile specimen should be collected using invasive methods for urine culture
Recommendations on the diagnosis and treatment of urinary tract infection[13]	Spain	2019	• Urinary catheterization or ultrasound-guided suprapubic aspiration is the method of choice in urgent situations • Clean-catch collection may be considered in non-urgent situations
Updated Italian recommendations for the diagnosis, treatment and follow-up of the first febrile urinary tract infection in Young children[14]	Italy	2019	• Clean-catch collection is recommended in primary care centers. In hospital settings, bladder catheterization is recommended, although clean-catch collection is accepted as a secondary option. • In infants under 6 months and < 10 kg, micturition-stimulating methods should be considered
Urinary tract infection in infants and children: diagnosis and management[15]	Canada	2020	• Urine collection in pre-continent children is recommended indistinctly with clean-catch, bladder catheterization, or suprapubic aspiration methods • Bagged samples can only be used for initial screening to rule out UTI
Swiss consensus recommendations on urinary tract infections in children[16]	Switzerland	2020	• A bagged sample should only be used to rule out the diagnosis of UTI • Samples collected using the clean-catch method, bladder catheterization, or suprapubic aspiration are accepted. • Bladder catheterization is recommended for children under 3 months of age, and clean-catch collection for older children, while suprapubic aspiration is considered as a secondary option
South Australian Paediatric Clinical Practice Guidelines Urinary Tract Infection in Children[17]	Australia	2021	• Suprapubic aspiration is recommended as the gold standard in infants with sepsis under 6 months of age • In children older than 6 months with signs of sepsis or following a failed suprapubic aspiration, bladder catheterization is recommended • In cases where the sample is not required urgently, clean-catch collection is recommended • The use of urine collection bags is not recommended even though a negative urinalysis would rule out UTI
Urinary tract infection in under 16s: diagnosis and management[18]	United Kingdom	2022	• It is recommended to use a clean-catch collection method whenever possible. When it is not possible, bladder catheterization or ultrasound-guided suprapubic aspiration should be used

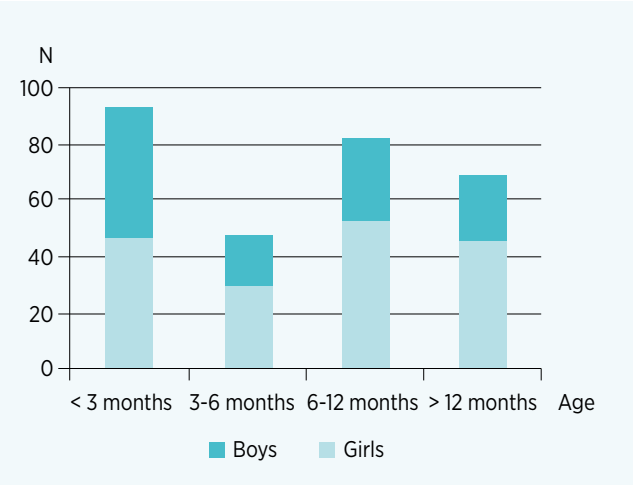

FIGURE 1. Sample distribution by age and sex.

DISCUSSION

Obtaining a sterile urine specimen in pre-continent children can be difficult and all methods have their limitations. Choosing the appropriate method of urine collection, especially in this population, requires a balance of factors such as clinical setting, available resources, speed of specimen collection, invasiveness, contamination rate, cost, and even parental and/or clinician preference. The collection method of choice differs among the different pediatric emergency departments in our country and clinical practice guidelines from various countries and societies do not provide unanimous recommendations regarding the method to use in pre-continent children. Currently, there is a debate in the literature regarding the optimal urine collection method for these patients.

In our study, the contamination rate associated with clean-catch collection was similar to that obtained by urinary

TABLE 3. Percentage of contaminated samples according to age and sex.

Age	Girls	Boys	TOTAL
0-3 months	12/47 (25.5%; 95%CI 15.3-39.5)	8/47 (17.0%; 95%CI 8.9-30.1)	20/94 (21.3%; 95%CI 14.2-30.6)
3-6 months	4/30 (13.3%; 95%CI 5.3-29.7)	3/18 (16.7%; 95%CI 5.8-39.2)	7/48 (14.6%; 95%CI 7.2-27.2)
6-12 months	7/53 (13.2%; 95%CI 6.5-24.8)	3/29 (10.3%; 95%CI 3.6-26.4)	10/82 (12.2%; 95%CI 6.8-21.0)
> 12 months	4/46 (8.7%; 95%CI 3.4-20.3)	3/23 (13.0%; 95%CI 4.5-32.1)	7/69 (10.1%; 95%CI 5.0-19.5)

catheterization as described in the reviewed literature[5,6]. However, it should be noted that in patients under 3 months of age, the contamination rate with this method is significantly higher than in other age groups, with no statistically significant differences between sexes, indicating that it may not be an appropriate method for the youngest patients. In this age group, considering bladder catheterization or using micturition-stimulation methods in collaboration with healthcare personnel could be options to limit the number of contaminated samples, although further studies are necessary to evaluate the contamination rate associated with the latter method.

According to the findings of this study, in children older than 3 months it would be acceptable to use the clean-catch collection method for urine culture.

Nevertheless, the primary limitation of this study is its small sample size. Therefore, it would be important to conduct a prospective, multicenter study to compare the methods of urine collection in pre-continent patients with suspected UTI.

CONCLUSIONS

The ideal method of urine collection should be minimally invasive, sensitive, specific, simple, and fast, but all techniques have their limitations. Current clinical practice guidelines vary in their recommendations for urine collection methods in clinically stable, pre-continent children. Most of the literature reviewed advocates for the use of the clean-catch collection method in this population, as it is a non-invasive test.

The findings of our study suggest that clean-catch urine collection in children under 3 months of age is associated with high contamination rates; however, it may be a suitable method for obtaining samples in pre-continent children older than 3 months who are clinically stable and suspected of having a UTI at the pediatric emergency department.

REFERENCES

1. Mekitarian Filho E, de Carvalho WB. Current management of occult bacteremia in infants. J Pediatr. 2015; 91(6 Suppl 1): s61-6.
2. O'Brien K, Edwards A, Hood K, Butler C. Prevalence of urinary tract infection in acutely unwell children in general practice: a prospective study with systematic urine sampling. Br J Gen Pract. 2013; 63(607): e156-64.
3. Shaikh N, Morone NE, Bost JE, Farrell MX. Prevalence of urinary tract infection in childhood. Pediatr Infect Dis J. 2008; 27(4): 302-8.
4. Kaufman J, Knight AJ, Bryant PA, Babl FE, Dalziel K. Liquid gold: the cost-effectiveness of urine sample collection methods for young precontinent children. Arch Dis Child. 2020; 105(3): 253-9.
5. Roncalés-Samanes MP, Caudevilla-Lafuente P, Sancho-Gracia E, Gómez-Barrena V, Pérez-Delgado R, Campos-Calleja. C. Recogida de orina en el lactante febril para el diagnóstico de la infección urinaria en Urgencias. Rev Pediatr Aten Primaria. 2015; 17(67): 205-11.
6. Teo S, Cheek JA, Craig S. Improving clean-catch contamination rates: a prospective interventional cohort study. Emerg Med Australas. 2016; 28(6): 698-703.
7. Tosif S, Kaufman J, Fitzpatrick P, Hopper SM, Hoq M, Donath S, et al. Clean catch urine collection: time taken and diagnostic implication. A prospective observational study. J Paediatr Child Health. 2017; 53(10): 970-5.
8. Kaufman J, Fitzpatrick P, Tosif S, Hopper SM, Donath SM, Bryant PA, et al. Faster clean catch urine collection (Quick-Wee method) from infants: randomised controlled trial. BMJ. 2017; 357: j1341.
9. Ochoa-Sangrador C, Brezmes-Valdivieso MF y Grupo Investigador del Proyecto. Métodos para la recogida de muestras de orina para urocultivo y perfil urinario. An Pediatr (Barc). 2007; 67(5): 442-9.
10. Diviney J, Jaswon MS. Urine collection methods and dipstick testing in non-toilet-trained children. Pediatr Nephrol. 2021; 36(7): 1697-708.
11. Kaufman J, Temple-Smith M, Sanci L. Urinary tract infections in children: an overview of diagnosis and management. BMJ Paediatr Open. 2019; 3(1): e000487.
12. Subcommittee on urinary tract infection. Reaffirmation of AAP Clinical Practice Guideline: The Diagnosis and Management of the Initial Urinary Tract Infection in Febrile Infants and Young Children 2-24 Months of Age. Pediatrics. 2016; 138(6): e20163026.
13. Piñeiro Pérez R, Cilleruelo Ortega MJ, Ares Álvarez J, Baquero Artigao F, Silva Rico JC, Velasco Zúñiga R, et al. Recomendaciones sobre el diagnóstico y tratamiento de la infección urinaria. An Pediatr (Barc). 2019; 90(6): 400.e1-9.
14. Ammenti A, Alberici I, Brugnara M, Chimenz R, Guarino S, La Manna A, et al. Updated Italian recommendations for the diagnosis, treatment and follow-up of the first febrile urinary tract infection in young children. Acta Paediatr. 2020; 109(2): 236-47.
15. Robinson JL, Finlay JC, Lang ME, Bortolussi R; Canadian Paediatric Society, Infectious Diseases and Immunization Committee, Community Paediatrics Committee. Urinary tract infections in infants and children: Diagnosis and management. Paediatr Child Health. 2014; 19(6): 315-25.

16. Buettcher M, Trueck J, Niederer-Loher A, Heininger U, Agyeman P, Asner S, et al. Swiss consensus recommendations on urinary tract infections in children. Eur J Pediatr. 2021; 180(3): 663-74.
17. Department for Health and Wellbeing, Government of South Australia. South Australian Paediatric Clinical Practice Guidelines. Urinary Tract Infection in Children. SA Health. [Internet]. 2021. www.sahealth.sa.gov.au.
18. National Institute for Health and Care Excellence (NICE). Urinary tract infection in under 16s: diagnosis and management. [Internet]. 2022. www.nice.org.uk.

SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas
Vol. 3. No. 2. May - August 2024

Emerg Pediatr. 2024; 3(2): 75-77

SPECIAL ARTICLE

Leading the way to improvement: An Interactive Course on Improvement Methodology for Latin American Physicians

Gisella Valderrama[1], Javier González del Rey[2]

[1]Pediatric Emergency Medicine Fellow, Cincinnati Children's Hospital, Quality Scholar at James M. Anderson for Health Systems Excellence. [2]Professor of Pediatrics, Associated Chair for Education, Designated Institutional Officer, Division of Emergency Medicine, Cincinnati Children's Hospital

Improvement methodology has taken on a key role in healthcare. Quality improvement initiatives can involve a wide range of activities, from implementing evidence-based practices to improving patient safety and satisfaction.

In Latin America, there are important challenges and opportunities to improve the quality of healthcare systems in several aspects, including the non-evidence-based use of material resources, medical errors, safety problems in hospitals, lack of access or delays in services, and medical care that often fails to focus on the needs of patients and their families. Therefore, it is necessary to direct efforts to optimize the quality of the healthcare system with the same dedication as in settings with greater resources.

The Latin American Society of Pediatric Emergency Medicine (SLEPE) is dedicated to standardizing the management and treatment of pediatric emergencies across the continent. To achieve this goal, the Society operates through various working groups, including a Working Group on Education. In 2022, the SLEPE partnered with Cincinnati Children's Hospital Medical Center to collaboratively develop and offer a course on improvement methodology.

The primary goals of this course were to disseminate and apply fundamental knowledge of continuous improvement methodology and to provide participants with the necessary tools to effectively carry out improvement projects. It was proposed that the course be conducted online, utilizing a recognized communication platform. SLEPE subsequently confirmed the participation of five teams from institutions from different Latin American countries: Paraguay, Uruguay, Argentina, Costa Rica and Guatemala. Each group was required to have a leader, with team members consisting of pediatric residents, nurses, and pediatricians. As an innovative strategy, personalized support was provided to the team leaders to facilitate the successful execution and implementation of quality improvement projects in their institutions.

Kern's 6-step approach was used for the development of the Improvement Methodology course. These steps include: (1) problem identification, (2) targeted needs assessment, (3) objectives and goals, (4) educational strategies, (5) implementation, and (6) evaluation and feedback[(1)].

EDUCATIONAL STRATEGIES

The course content is consistent with curriculum of the Institute for Healthcare Improvement (IHI) and the improvement methodology described by Langley *et al.,* addressing identified knowledge gaps. The training lasted 12 months and included four theory sessions and three coaching sessions for team leaders. Participants were encouraged to acquire Langley's book as a guide[(2)].

GRADUATION

All projects focused on the pediatric emergency department, ranging from how to optimize the triage of patients arriving in the emergency department to double-checking frequently used medications in the shock and trauma room to improve the safety of medication administration. Eighty percent of the improvement methodology projects achieved the established goal.

Received on April 14, 2024
Accepted on April 16, 2024

Corresponding author:
Gisella Valderrama
E-mail: gisella.valderrama@cchmc.org

TABLE 1. Course design.

	Participants	Program
Learning goal	By the end of the course, the participants will be able to: 1. Design a Global and SMART objective 2. Design and analyze the different components of the key driver diagram 3. Demonstrate the steps of a PDSA cycle (plan, do, study, act) and use a run chart analysis as a measure of effectiveness	By the end of the course, over 80% of the participants will be able to implement their Quality Improvement projects within their respective institutions
Process goal	Each participant will have attended all four sessions of the course	By the end of the course, participants will run at least 2 PDSA cycles in their Quality Improvement project
Results goal	By the end of the course, each participant will complete a quality improvement project and describe the results	By the end of the course, more than 80% of the participants will demonstrate improvements and "shift the centerline" in their Quality Improvement project. All participants will be able to analyze and provide feedback for Quality Improvement projects

SMART objective: Specific, Measurable, Achievable, Relevant, and Time-bound; PDSA cycle: Plan, Do, Study, Act.

FIGURE 1. Diagram illustrating the process of implementation of improvement methodology.

TABLE 2. Contents of the course.

Type of session	Date	Description
Theory # 1	March 2023	The teams presented their project ideas and explained why they were interested in addressing that particular problem. The following topics were addressed: the concept of science of improvement based on Deming's theory and how to design SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) objectives
Personalized assessment		After learning how to create global and SMART objectives, the team leaders presented their objectives and received immediate evaluation and feedback. Additionally, they were taught how to perform system mapping using sFMEA (system Failure Modes and Effects Analysis)
Theory # 2	Jun 2023	The following topics were addressed: definition of data measurement, the key driver diagram, PDSA cycle, and run charts. During this session, participants were asked to reflect on the outcome, process, and balance measures they used for their project and to think about how they were going to reach them. They were also invited to present the sFMEA or system mapping of their respective projects
Personalized assessment	September 2023	The concepts of the PDSA cycle and run chart and how to use them to evaluate their data were reinforced. Team leaders presented their preliminary data and were given feedback on the measures chosen for their respective projects
Theory # 3	November 2023	The following topics were addressed: run charts vs. control charts, types of control charts, special cause rules and psychology of change. The teams presented their key driver diagrams and run charts
Personalized assessment	January 2024	The PDSA cycles performed by each team and their respective Run charts were analyzed
Theory # 4	February 2024	The following topics were addressed: summaries of the key concepts of improvement methodology, how to implement and sustain over time a project that achieved system improvement, and how to be a leader and manage a team. At the end of the session, each team presented their final projects as part of the graduation

SMART objective: Specific, Measurable, Achievable, Relevant, and Time-bound; PDSA cycle: Plan, Do, Study, Act; Run charts: dispersion diagrams; sFMEA: system Failure Modes and Effects Analysis.

CONCLUSION

The Interactive Course on Improvement Methodology for Latin American Physicians provided participants with an introduction to improvement methodology. Mentors accompanied the teams to apply the concepts in their projects and collaborated to overcome barriers. The combination of online discussion and individualized mentoring could be an effective learning strategy. All teams used the improvement methodology concepts and tools in their projects and continue to work to implement them in their healthcare system.

REFERENCES

1. Thomas PA, Kern DE, Hughes MT, Tackett SA, Chen BY. Curriculum development for medical education: a six step approach. 4th ed. Johns Hopkins University Press; 2022.
2. Langley GJ, Moen R, Nolan KM, Nolan TW, Norman CK, Provost LP. The Improvement Guide: A Practical Approach to Enhancing Organizational Performance. 2nd ed. San Francisco: Jossey-Bass Publishers; 2009.

SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas
Vol. 3. No. 2. May - August 2024

Emerg Pediatr. 2024; 3(2): 91-93

CASE REPORT

Accidental cannabis intoxication with an unexpected outcome

Ariadna Saló Fradera, Lluís Subirana Campos, Antonio de Francisco Prófumo, Irina Francia Güil, Laura Naqui Xicota

Department of Pediatrics. Hospital Germans Trias i Pujol. Badalona

Received on July 13, 2023
Accepted on September 19, 2023

Key words:

Cannabis
Emergencies
Drowsiness
Intoxication

Palabras clave:

Cannabis
Emergencias
Somnolencia
Intoxicación

Abstract

The use of cannabis and its derivatives has increased significantly in recent years. This has led to a rise in cases of accidental intoxication in young children and infants, especially in countries where its use has been legalized. The variety of available products containing cannabis makes it difficult to identify the source of exposure.

We report the case of a 6-year-old boy who came to the emergency department because of vomiting and severe headache while at school. On arrival at the emergency department, he presented with drowsiness and bradypsychia. Complementary examinations did not reveal any abnormality, except for the presence of cannabinoids in urine. The family and the school were unaware of the source of intoxication and only the correct coordination between the social services and the school managed to clarify the origin of the intoxication.

Correct identification of the source of intoxication is essential to implement preventive measures, such as improving labeling, establishing safety barriers, or adapting legislation for these products. It is important that healthcare providers consider a wide range of potential sources of intoxication before declaring it as unknown.

INTOXICACIÓN ACCIDENTAL POR CANNABIS CON DESENLACE INESPERADO

Resumen

El consumo de cannabis y sus derivados ha aumentado significativamente en los últimos años. Esto ha llevado a un incremento en los casos de intoxicación accidental en niños pequeños y lactantes, especialmente en países donde su consumo se ha legalizado. La variedad de productos disponibles que contienen cannabis dificulta la identificación de la fuente de exposición.

Se expone el caso de un niño de 6 años que acudió a Urgencias por vómitos y cefalea intensa estando en la escuela. A su llegada a Urgencias presentaba somnolencia y bradipsiquia. Las exploraciones complementarias no revelaron ninguna anormalidad, excepto por la presencia de cannabinoides en orina. La familia y la escuela desconocían la fuente de intoxicación y solamente la correcta coordinación entre Servicios Sociales y el centro escolar consiguieron esclarecer el origen de la intoxicación.

La identificación correcta de la fuente de intoxicación resulta esencial para poder adoptar medidas preventivas, como pueden ser mejorar el etiquetado, establecer barreras de seguridad o adecuar la legislación de estos productos. Es importante que los profesionales de la salud consideren una amplia gama de posibles fuentes de intoxicación antes de declararla como desconocida.

Corresponding author:
Ariadna Saló Fradera
E-mail: asalof.germanstrias@gencat.cat

OBJECTIVE OF THIS CASE REPORT

To warn about new sources of accidental cannabis intoxication in pediatric patients.

INTRODUCTION

The use of cannabis and its derivatives, both for recreational purposes and for therapeutic or cosmetic purposes, has increased significantly in recent years with the emergence of stores specializing in these types of products. The variety of forms and products marketed with this substance is growing every day.

Although still an infrequent reason for consultation, unintentional cannabis intoxications among young schoolchildren and infants have increased in recent years due to the wide availability of this substance[1], especially in countries where its use has been legalized[2].

The wide range of available products can make it difficult to recognize the source of exposure. Here we describe the case of a schoolchild with accidental cannabis intoxication, where the source of intoxication could not be clarified until there was interdisciplinary coordination between the social work and education teams. Given the interest generated by the peculiarity of this case (unknown source of intoxication) it is presented for consideration.

CASO REPORT

A 6-year-old boy with no remarkable history came to the emergency department due to vomiting and severe frontal headache of sudden onset during his stay at school 6 hours before the visit. There was no history of head injury, and the patient was previously asymptomatic.

Upon admission to the emergency room, he exhibited an alteration of the pediatric assessment triangle due to an abnormal appearance. He showed a tendency towards somnolence but responded appropriately to verbal commands, albeit with marked bradypsychia. Initial vital signs were within normal limits. The only notable finding from the initial neurological examination was a Glasgow Coma Scale score of 13 (Eye 3, Verbal 4, Motor 6), with mydriatic, isochoric, and reactive pupils.

Due to neurological symptoms, initial investigations included a complete blood count, coagulation profile, basic metabolic panel, and arterial blood gases, all of which were normal. Additionally, a urine toxicity screen was conducted. An urgent brain computed tomography (CT) scan was performed, which showed no significant abnormalities. The urine toxicology test indicated the presence of cannabinoids but was negative for other toxins screened. Consequently, the patient was admitted to the hospital for strict dietary management, intravenous fluid therapy, close monitoring of symptoms, and ongoing assessment of his condition.

When the family was asked about the test results, they indicated they were unaware of the possible source of intoxication, asserting they did not live with cannabis users in their household. The school was subsequently contacted for additional information, confirming the patient had been asymptomatic upon arrival but began exhibiting clinical symptoms shortly after returning from morning recess.

Social services were notified to assess the case, and it was confirmed that the family did not demonstrate any social risk indicators at present.

When the family was interviewed again, the mother reported that on the day of the incident, the patient had eaten a package of cookies for breakfast that she had found the previous day in a room at the hotel where she works as a housekeeper. The package was sealed and showed no signs of tampering. With this new information, social services contacted the school, which confirmed the presence of a "Stoneo" cookie wrapper in the classroom garbage can and provided photographs of it (Figure 1). The packaging mentioned an amount of 300 mg without specifying the substance to which this amount referred. It was assumed to be tetrahydrocannabinol, given phrases such as "Stoner's favorite cookie" on the labeling and the final diagnosis of the case.

During his hospital stay, the patient showed progressive improvement in his neurological status with good oral tolerance, and he was discharged with a normal physical examination 18 hours after admission.

DISCUSSION

The clinical presentation of the case was consistent with typical symptoms of cannabis intoxication. Symptoms are usually nonspecific and include manifestations such as central nervous system depression (lethargy, coma), confusion, agitation, and ataxia. Nausea and vomiting, conjunctival hyperemia, mydriasis, tremors, speech difficulties, and behavioral disturbances are common. In episodes of severe intoxication, bradycardia, hypotension, convulsions, and respiratory depression have been reported, and may require orotracheal intubation[3].

Regarding diagnosis, the literature shows that invasive and unnecessary complementary examinations, such as CT scan or lumbar puncture, are relatively frequent, especially if a thorough anamnesis is not conducted and directed towards the possible intake of toxins[4]. However, due to legal or social implications, parents may choose not to disclose possible exposure to toxins, complicating the diagnostic process. In the case presented here, in the absence of any indication of possible intake of a toxic substance, a CT scan was performed prior to the urine toxicity test, which ultimately revealed the cause of the clinical presentation.

Considering the age of presentation, the low incidence in this age range is noteworthy. Classical studies show a bimodal distribution with a first peak in early childhood, which responds to intoxications due to the exploratory drive of infants, and a second peak during adolescence, when recreational use begins[5,6]. Therefore, intoxications at school age are infrequent. However, an increase in accidental poisonings in this age group has recently been observed following the relaxation of legal restrictions in certain countries, which is associated with the consumption of edible products. These new products, such as the one in this case, are produced

FIGURE 1. Wrapping of cookies eaten by the patient.

and packaged to imitate popular sweets, greatly facilitating consumption by patients in this age group[7]. In contrast, in countries where cannabis use is still illegal, there has been an increase in patients under 6 years of age attributed to a general increase in its use[8].

COMMENTS

The accurate identification of the source of intoxication is of great importance to consider possible interventions at the commercial level (a change of labeling with improvement of the identification and risks of the substance, prohibition of certain products, etc.) as well as to avoid possible interventions by social work teams to assess intrafamily negligent behaviors that would be unnecessary if the source were correctly established.

In the presented case, it was found that the product is marketed in some states of the United States, Canada, and Mexico, and can be purchased online. Given the great similarity of the packaging and contents to a product commonly consumed by the pediatric population, it is considered that this type of intoxication could be repeated, and thus the product should be withdrawn from the market.

In conclusion, it is likely that cannabis intoxications in all age groups will become increasingly frequent in the coming years, given the wide and growing range of possible sources of exposure. Consequently, a detailed and focused anamnesis could prevent the use of unnecessary complementary tests, as well as the unwarranted intervention of social services. Identifying the source of intoxication is essential for implementing legal measures regarding the commercial distribution of such products. Therefore, healthcare providers should consider a wide range of potential sources of intoxication before deeming it unknown.

Ethical-regulatory aspects: informed consent has been obtained from the parents.

REFERENCES

1. Azkunaga B, Crespo E, Oliva S, Humayor J, Mangione L. Intoxicaciones por droga ilegal en niños de corta edad en los servicios de urgencias pediátricos españoles. An Pediatr (Barc). 2017; 86(1): 47-9.
2. Cohen N, Galvis Blanco L, Davis A, Kahane A, Mathew M, Schuh S, et al. Pediatric cannabis intoxication trends in the pre and post-legalization era. Clin Toxicol (Phila). 2022; 60(1): 53-8.
3. Stoner MJ, Dietrich A, Lam SH, Wall JJ, Sulton C, Rose E. Marijuana use in children: An update focusing on pediatric tetrahydrocannabinol and cannabidiol use. J Am Coll Emerg Physicians Open. 2022; 3(4): e12770.
4. Gaudet AL, Hogue K, Scott SD, Hartling L, Elliott SA. Acute pediatric cannabis intoxication: A scoping review. J Child Health Care. 2024; 28(1): 196-214.
5. López Segura N, Herrero Pérez S, Esteban Torné E, Seidel Padilla V, García Algar O, Mur Sierra A. Intoxicación por ingesta accidental de cannabis. An Esp Pediatr. 2002; 57(1): 76-7.
6. Álvarez N, Ros P, Pérez MJ. Caso de intoxicación por cannabis de un niño de 16 meses. An Pediatr. 2009; 70(4): 396-7.
7. MacCoun RJ, Mello MM. Half-baked--the retail promotion of marijuana edibles. N Engl J Med. 2015; 372(11): 989-91.
8. Claudet I, Mouvier S, Labadie M, Manin C, Michard-Lenoir AP, Eyer D, et al; Marie-Jeanne Study Group. Unintentional Cannabis Intoxication in Toddlers. Pediatrics. 2017; 140(3): e20170017.

SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas
Vol. 3. No. 2. May - August 2024

Emerg Pediatr. 2024; 3(2): 94-97

CASE REPORT

Subglottic hemangioma: not all stridor is laryngitis

María López de Viñaspre Vera-Fajardo[1], Mariela Giordano Urretabizkaya[2], Cristina López Fernández[3]

[1]Attending Physician, Department of Pediatrics, Hospital Universitario Araba, Vitoria-Gasteiz, Spain. [2]Internal Medicine Resident in Pediatrics, [3]Attending Physician. Department of Pediatrics. Hospital Marqués de Valdecilla. Santander

Received on August 14, 2023
Accepted on November 20, 2023

Key words:

Respiratory sounds
Stridor
Hemangioma
Larynx

Palabras clave:

Ruidos respiratorios
Estridor
Hemangioma
Laringe

Abstract

Stridor is the sound produced during respiration due to irregular airflow in a narrowed airway and can be due to a wide variety of conditions. In infants with persistent stridor, it is essential to include congenital upper airway malformations in the differential diagnosis.

Here we present the case of an almost two-month-old infant with persistent stridor due to subglottic hemangioma. This congenital anomaly of the airway is uncommon but important to recognize, as it can grow considerably and potentially compromise the patient's life. In addition, there is a specific therapy with systemic propranolol, which has proven effective in remission of growth and reduction of the size of these lesions.

HEMANGIOMA SUBGLÓTICO: NO TODO ESTRIDOR ES LARINGITIS

Resumen

El estridor es el sonido producido durante la respiración provocado por el paso de un flujo de aire que se vuelve turbulento al atravesar la vía aérea con un calibre estrechado, pudiendo deberse a una gran variedad de patologías. En los lactantes con estridor persistente, es imprescindible incluir en el diagnóstico diferencial las malformaciones congénitas de la vía aérea superior.

Se presenta el caso de una lactante de casi dos meses con estridor persistente debido a hemangioma subglótico. Esta anomalía congénita de la vía aérea es poco frecuente, pero de vital importancia, dado que en su evolución natural puede alcanzar un tamaño considerable llegando a comprometer la vida del paciente. Además, cuenta con una terapia específica con propranolol sistémico, la cual ha demostrado ser eficaz en la remisión del crecimiento y reducción del tamaño de estas lesiones.

Corresponding author:
María López de Viñaspre Vera-Fajardo
E-mail: marialpzdevinaspre@gmail.com

INTRODUCTION

Stridor is the sound produced during respiration due to irregular airflow in a narrowed airway. The most common cause in childhood is acute laryngitis of viral origin[1], although there are other infectious, inflammatory, anatomical, and functional causes, which may be congenital or acquired.

The differential diagnosis of stridor includes airway malformations, especially in children under 6 months of age, where the incidence of laryngitis is low and laryngomalacia is more common[1]. These malformations include subglottic hemangiomas, proliferative vascular tumors that present with symptoms of airway obstruction starting at around two months of life[2]. They are characterized by obstructive dyspnea and biphasic stridor[2]. The diagnosis is made by observation of the lesion on laryngoscopy[2], and it is treated with propranolol[3,4].

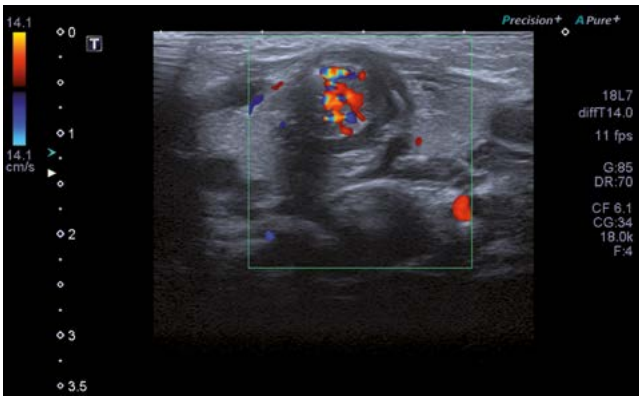

FIGURE 1. Color Doppler ultrasonography of the neck. Ultrasound imaging shows anterior displacement of the upper airway with lobar narrowing of the subglottic trachea. A measuring 7 x 7 mm is identified within the thyroid cartilage in the transverse plane, which appears markedly hypervascular on color Doppler.

CASE REPORT

The patient was an infant aged 1 month and 25 days (gestational age 41 weeks and 3 days), with no significant perinatal history, evaluated in the emergency department due to respiratory distress. The infant presented with a 2-week history of catarrhal symptoms, associated in the last 24 hours with respiratory distress and a metallic cough. No infectious exposures at home or family history were reported.

On arrival she presented with an unstable Pediatric Evaluation Triangle (PET) indicating respiratory distress. The airway was patent, with inspiratory stridor at rest, subcostal, intercostal, and supraclavicular retractions, polypnea up to 45 breaths per minute, oxygen saturation at 95%, and pulmonary auscultation revealing good bilateral ventilation without added noises. The heart rate was 165 bpm, blood pressure was 77/49 mmHg, and temperature 36.5°C. Capillary blood gases showed the following values: pH 7.38, pCO_2 46.4 mmHg, HCO_3 27.3 mmol/L, EB -1.6 mmol/L. Chest X-ray showed no abnormalities or tracheal stenosis; a nasopharyngeal swab was positive for rhinovirus.

Acute laryngitis of moderate intensity according to the Westley scale (4 points) was suspected, therefore nebulized adrenaline and oral dexamethasone were administered with a favorable response, decreasing the respiratory difficulty and stridor, which did not completely subside. She remained hospitalized for 4 days, received two additional doses of corticosteroids, and at discharge persisted with mild intermittent stridor during crying.

After 48 hours, the patient was readmitted to the emergency department due to increased stridor, associated with metallic cough and significant respiratory distress. Again, PET was altered with breathing difficulties, inspiratory stridor, and three-level retractions. Given the unfavorable course despite optimized treatment of laryngitis, and since the patient was younger than 6 months with persistent stridor after resolution of catarrhal symptoms, it was considered necessary to rule out a congenital malformation of the upper airway. Therefore, imaging tests and evaluation by otolaryngology were requested.

Doppler ultrasound of the neck (Figure 1) showed anterior displacement of the upper airway with lobulated narrowing of the subglottic trachea due to the presence of a markedly hypervascular mass, findings suggestive of subglottic hemangioma. The study was completed with neck computed tomography (CT) (Figure 2), showing a focal mass with homogeneous enhancement after contrast administration, located in the left subglottic region with significant secondary laryngeal obstruction. A fibrolaryngoscopy was performed by otolaryngology, showing bilateral subglottic edema, more marked on the left side and in the posterior region.

As subglottic hemangioma was suspected, treatment was started with oral propranolol at 1 mg/kg/day, which was progressively increased to 3 mg/kg/day. The stridor disappeared completely in 48 hours and there were no adverse effects. After 5 days, an ultrasound revealed that the diameter of the lesion had decreased from 7 mm at diagnosis to 0.9 mm. After 3 months of treatment, a repeat fibrolaryngoscopy showed a small lesion remaining in the left subglottic region, occupying 10% of the lumen. By 10 months, complete remission was observed. At 12 months, propranolol was gradually reduced and discontinued one month later.

DISCUSSION

The presence of stridor suggests significant obstruction of the larger airways[5]. It is a common reason for consultation in pediatrics[6] and is an important finding that requires rapid evaluation and sometimes emergency intervention.

Stridor is the form of presentation of a wide variety of upper airway disorders, and its characteristics may help guide the etiological diagnosis and indicate the level of the obstruction. A high volume suggests significant airflow obstruction, inspiratory stridor usually reflects obstruction in the supraglottic region, while expiratory stridor is associated with obstruction at the intrathoracic level. If the stridor is similar

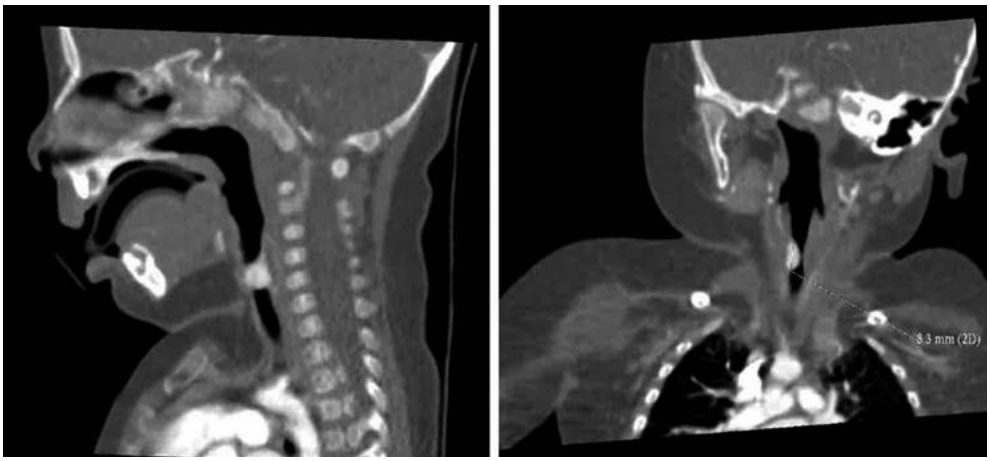

FIGURE 2. Computerized tomography scan of the neck. The CT scan of the neck reveals a focal mass measuring 8.3 mm, enhancing homogeneously after intravenous contrast administration. The lesion is located in the left subglottic region and is associated with significant secondary laryngeal obstruction.

in both phases of respiration, the lesion is likely located at the laryngeal level[1].

In children older than 6 months, the most common cause is acute laryngitis of viral origin[1]. In infants younger than 6 months, the most common cause is laryngomalacia, although the differential diagnosis should include congenital upper airway malformations such as subglottic hemangioma, a rare but potentially fatal infantile hemangioma if it reaches a size that completely obstructs the tracheal lumen[3].

Infantile hemangiomas are proliferative vascular tumors composed of endothelial cells that can be located anywhere in the body, including the respiratory tract. One percent of children with cutaneous infantile hemangiomas have subglottic hemangiomas, while 50% of children with subglottic hemangiomas have associated cutaneous hemangiomas, usually in the cervicofacial region[2,5].

Subglottic hemangiomas predominate in females (2:1 ratio)[2], and their most common location is at the left posterolateral subglottic level[2,7]. They are not present at birth and proliferate during the first 15-18 months of life. Symptoms appear at around 2 months, and their intensity depends on the degree of obstruction. The presence of dysphonic cough and recurrent croup is frequent, and biphasic stridor, with greater intensity during inspiration, is characteristic[2]. Diagnosis is made by direct laryngoscopy[2,3]. Plain radiography may show asymmetric narrowing of the subglottis, and CT with contrast may be useful to delineate large hemangiomas or those extending beyond the larynx.

Systemic therapy with propranolol is the first-line treatment and it is believed to act through a mechanism of inhibition of angiogenesis8. The dose is 1 to 3 mg/kg/day, divided into 2 or 3 doses, and should be maintained until 15 months[5,7-10], at which point the proliferative phase of the hemangioma ends and involution begins according to the natural progression of the condition. The incidence of complications is low[2-4], the failure rate is 0.9%[9], and the recurrence rate after removal is 19-25%[10]. Other treatments classically used include systemic or locally injected corticosteroids and open surgical or laser resection. However, these are less effective compared to propranolol and are currently reserved as second-line treatments[2,3,7].

COMMENTS

There is a wide variety of conditions that can cause stridor in infancy, of which laryngitis is the most common. The differential diagnosis of stridor should include congenital upper airway malformations, especially in infants with persistent or recurrent stridor.

Subglottic hemangioma is rare but potentially fatal; therefore, it should be suspected in infants younger than 6 months of age with persistent stridor and no other identifiable cause.

BIBLIOGRAFÍA

1. Torres MC, Marugán JM. Laringitis. Crup y estridor. Pediatr Integral. 2013; XVII(5): 343-50.
2. Peñarrocha Terés J, Hernández-Gancedo C. Malformaciones congénitas de la vía aérea superior. Pediatr Integral. 2013; XVII(5): 351-9.
3. Krstulovic C, Ibañez-Alcañiz I, Alamar-Velázquez A, López-Andreu J, Evoli-Buselli M. Respuesta rápida de hemangiomas subglóticos a propranolol. An Pediatr (Barc). 2016; 85(4): 210-1.
4. Elluru R, Friess M, Richter G, Grimmer JF, Darrow D, Shin J, et al. Multicenter evaluation of the effectiveness of systemic propranolol in the treatment of airway hemangiomas. Otolaryngol Head Neck Surg. 2015; 153(3): 452-60.
5. Quintero D, Fakhoury K. Assessment of stridor in children. UpToDate [en línea] [consultado el 13/02/2022]. Disponible en: https://www.uptodate.com/contents/assessment-of-stridor-in-children
6. Mintegi S, Benito J, García S, Corrales A, Bartolomé MJ, Trebolazabala N. Demanda y asistencia en un servicio de urgencias hospitalario. An Pediatr (Barc). 2004; 61(2): 156-61.
7. García-Casillas MA, Matute JA, Cedrá J, Vázquez J. Manejo del angioma subglótico en lactantes. Cir Pediatr. 2004; 17(3): 137-40.
8. Dolan S, Alatsatianos A, McAllister K, Kunanandam T. Concurrent subglottic and carotid sheath haemangiomas in a paediatric patient – an extremely rare clinical entity. J Surg Case Rep. 2022; 2022(11): rjac542.

9. Sebaratnam D, Rodríguez AI, Wong L-CF, Wargon O. Infantile hemangioma. Part 2: Management. J Am Acad Dermatol. 2021; 85(6): 1395-404.

10. Caussé S, Aubert H, Saint-Jean M, Puzenat E, Bursztejn AC, Eschard C, et al. Propranolol-resistant infantile haemangiomas. Br J Dermatol. 2013; 169(1): 125-9.

SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas
Vol. 3. No. 2. May - August 2024

Emerg Pediatr. 2024; 3(2): 98-99

NURSING

The critically ill pediatric patient: inside and outside the Emergency room

María Reyes Campillo Palomera

Hospital Clínico Universitario Virgen de Arrixaca. Murcia

On May 10, 2024, within the framework of the XXVIII Meeting of the Spanish Society of Pediatric Emergency Medicine, a nursing round table took place entitled: **"The critically ill pediatric patient: inside and outside the Emergency room".**

The aim of this round table was to provide a comprehensive overview of the care of critically ill children in various settings beyond the hospital emergency department. Three presentations were given by nurses working in a health center, a hospital emergency department, and a pediatric and neonatal critical care transport service. The day-to-day realities of caring for critically ill pediatric patients with the available resources were discussed.

The round table was moderated by María del Carmen Hermida Bouzas, the nursing supervisor of the unit at the Teresa Herrera Maternity Hospital in A Coruña.

The first presentation was given by Cristina Sanmartín Chapela, a pediatric nurse specialist who trained at the Teresa Herrera Maternity Hospital and currently works at the Health Center A Parda in Pontevedra. In her presentation, entitled "Organization and resources available for the critically ill child in primary care," Cristina discussed the approach to critically ill children from the perspective of an urban health center. She identified three main factors as barriers to quality care for critically ill children in primary care:

1. The low number of actual emergencies seen.
2. Frequent turnover of personnel.
3. The limited resources available.

Received on June 4, 2024
Accepted on June 6, 2024

Corresponding author:
María Reyes Campillo Palomera
E-mail: reyescampillopalomera@gmail.com

The first two factors were identified as major barriers to the training of personnel involved in the emergency care of pediatric patients in this setting.

Next, María Inés Gómez Camafreita, a pediatric emergency nurse at the Teresa Herrera Maternity Hospital in A Coruña and a member of the organizing committee of the XXVIII Meeting of the SEUP, presented the second lecture, entitled "Nursing roles in the pediatric critical care ward".

María Inés explained how, in recent years, her team implemented a work model in their pediatric emergency department (PED) based on workload distribution by roles in the stabilization room. This model, already established in other hospitals, was adapted to local characteristics and implemented through on-site simulation.

In the presentation, the current nursing work system in the stabilization room of her department was presented, describing three distinct nursing roles along with their defined functions, and the designated role for the auxiliary nursing care technician (TCAE, as abbreviated in Spanish). These roles include the respiratory nurse, circulatory nurse, and medication nurse, as well as the responsibilities fulfilled by the TCAE.

Finally, two specialist nurses in pediatrics from the SEM (Medical Emergency Service), Hospital San Joan de Déu de Barcelona, Montserrat Navarro Bolinches and Gema Tapia Serrano, presented their lecture entitled "Transport of pediatric and neonatal critically ill patients", wherein they delineated the responsibilities undertaken by nurses within a pediatric out-of-hospital transport service. This service involves the transfer of patients between hospitals of varying care levels, as well as providing care at the street level.

In this presentation, it was emphasized how crucial it is to ensure maximum coordination and establish care circuits between different levels of healthcare and among hospitals. Such coordination is essential for ensuring the highest quality in the transportation of critically ill children.

After the three presentations, there was some time for discussion, where several nurses shared insights into the

realities of their respective departments, highlighting common issues faced by most PEDs regarding nursing staffing. However, due to time constraints, some questions remained unanswered during the session. The speakers subsequently addressed these inquiries via email to all participants who reached out to them.

In summary, the nursing session was outstanding, consistent with the overall quality of the XXVIII Annual Meeting, with excellent speakers and addressing a crucial topic. We all have much to learn and contribute based on our experiences and knowledge.

SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas
Vol. 3. No. 2. May - August 2024

Emerg Pediatr. 2024; 3(2): 100-102

THE FELLOW-MIR'S CORNER

Emergency Department tricks: osmotic reduction of paraphimosis

Karen Apraez Murillo[1], Laura Marcela Galvis Blanco[2]

[1]Resident in Pediatrics at the Universidad ICESI, Fundación Valle del Lili. Colombia. [2]Pediatric Emergency Specialist. Fundación Valle de Lili. Universidad ICESI. Cali, Colombia

Received on June 11, 2024
Accepted on June 17, 2024

Key words:
Paraphimosis
Treatment
Reduction osmotic

Palabras clave:
Parafimosis
Tratamiento
Reducción osmótica

Abstract

Paraphimosis is a common urological emergency, in which the foreskin is trapped behind the coronal sulcus of the penis, forming a constricting band that causes strangulation of the glans, painful vascular involvement, distal venous congestion, edema, and even necrosis. Therefore, timely treatment in the emergency department is essential.

The primary treatment for paraphimosis is manual reduction with compression of the glans and gradual retraction of the foreskin, which can be extremely painful and require sedation in the operating room, or more invasive maneuvers such as micro-puncture and dorsal slit of the foreskin.

This article presents an alternative, effective, and less painful method for reducing paraphimosis using a common osmotic agent: 50% dextrose or 20% mannitol.

TRUCOS DE LA GUARDIA: REDUCCIÓN OSMÓTICA DE LA PARAFIMOSIS

Resumen

La parafimosis presenta una emergencia urológica común, en la que el prepucio queda atrapado detrás del surco coronario del pene, formando una banda de tejido constrictivo que ocasiona estrangulamiento del glande, compromiso vascular doloroso, congestión venosa distal, edema e incluso necrosis, por lo que el tratamiento en los servicios de Urgencias debe ser oportuno.

El tratamiento más conocido de la parafimosis es la reducción manual con compresión del glande y retracción gradual del prepucio, que en algunas ocasiones puede llegar a ser extremadamente dolorosa y requerir sedación en sala de operaciones, o maniobras más invasivas como micropunciones del prepucio y hendidura dorsal del mismo.

El presente artículo presenta una manera alternativa de reducción de la parafimosis, efectiva y menos dolorosa, mediante el uso de un agente osmótico común: dextrosa al 50% o manitol al 20%.

Corresponding author:
Laura Galvis Blanco
E-mail: Laura.galvis@fvl.org.co

INTRODUCTION

Paraphimosis is a urologic emergency that occurs in about 1% of uncircumcised boys, adolescents, and adult men, where the foreskin becomes trapped behind the coronal sulcus of the glans penis. The primary treatment of paraphimosis is manual reduction with compression of the glans and gradual retraction of the foreskin[1,2]. Without adequate and early treatment, the condition can lead to entrapment and strangulation of the glans, causing vascular congestion, edema, and necrosis[3]. It is important to distinguish paraphimosis from phimosis, a non-urgent condition where the foreskin cannot be retracted backward.

Delayed treatment of paraphimosis can lead to severe complications such as tissue necrosis, gangrene, and partial amputation of the glans; therefore, it is crucial for emergency department teams to diagnose and treat this condition in a timely manner[4].

ETIOLOGY

Paraphimosis commonly occurs iatrogenically, when the foreskin is retracted for cleaning, placement of a urinary catheter, procedures such as cystoscopy, or for a genital examination[5]. Other less common causes include piercings in the preputial ring and trauma during sexual activity[6].

CLINICAL MANIFESTATIONS

Paraphimosis usually presents as acute penile pain, with a congested glans and a collar of swollen foreskin around the coronal sulcus. A band of constricted tissue is typically identified immediately behind the head of the penis. Occasionally, the constriction of the glans can cause ulceration due to ischemia and urinary obstruction[7].

A pink color of the glans indicates a fairly good blood supply, while a dark, pale, bluish, or black color suggests ischemia or even necrosis[5].

DIAGNOSIS IN THE EMERGENCY DEPARTMENT

The diagnosis is made clinically by identifying the previously described findings. Laboratory or imaging studies are not required[1].

In addition to the physical examination, taking a history to determine the time of symptom onset and the presence of additional symptoms helps confirm the diagnosis and exclude the main differential diagnoses[8]:

- Acute angioedema.
- Allergic contact dermatitis.
- Hair torniquet.
- Balanitis.
- Penile carcinoma.
- Penile hematoma.
- Penile fracture.

TREATMENT: OSMOTIC REDUCTION

Rapid pain relief will reduce the child's suffering and anxiety and facilitate the reduction maneuvers required to resolve the paraphimosis. The pain associated with reduction maneuvers is often so severe that procedural sedation or general anesthesia is often required[9].

Recent studies have proposed non-invasive strategies, such as ketamine nebulization and the use of topical anesthesia with LET gel (lidocaine 4%, epinephrine 0.1%, tetracaine 0.5%), as the initial mainstay of treatment in the emergency department. These strategies provide adequate analgesia and offer the advantage of avoiding transfer to the operating room and the administration of intravenous drugs[10,11].

Once the initial analgesia has been administered, the traditional method involves the intermittent application of ice and the exertion of circumferential and constant pressure from the shaft of the penis towards the glans. As the edema of the foreskin decreases, the thumbs are positioned on the glans to push it backward and reduce it into the previously retracted foreskin[1].

The osmotic method for paraphimosis reduction has been described since the 1970s but fell into disuse until the 1990s, when studies were again published reporting successful reduction of rectal and stomal prolapse using granulated sugar[12-14].

The physiological principle is simple: the application of an osmotically active substance creates a concentration gradient that forces water to diffuse from the site of lower concentration (edematous paraphimotic ring) to the site of higher concentration (area where the osmotic agent is applied), thereby reducing edema and tissue tension[15].

Recent studies have reported successful reduction of paraphimosis using 20% mannitol, achieving rapid reduction (less than 45 minutes), painlessly, and at a much lower cost compared to other reduction strategies[16].

How to do this in a practical way:

1. Apply lidocaine gel to the glans and shaft of the penis.
2. Soak gauze in the available osmotic agent (either mannitol 20% or dextrose 50%).
3. Cover the glans and the paraphimotic ring with the gauze soaked in the osmotic agent and leave it in place for 30-45 minutes.
4. Reapply mannitol 20% or dextrose 50% to prevent the gauze from drying out.
5. Reduce paraphimosis gently and without pain using circumferential pressure maneuvers.

CONCLUSIONS

Paraphimosis is a true urologic emergency, and pediatric emergency physicians should be competent in its identification and timely treatment.

In addition to rapid non-invasive methods for administering analgesia, osmotic methods can be considered for the treatment of paraphimosis, achieving successful reduction without the need for invasive and painful procedures. This

approach also helps avoid the potential adverse effects and costs associated with sedation and management in the operating room.

REFERENCES

1. Manjunath AS, Hofer MD. Urologic Emergencies. Med Clin North Am. 2018; 102(2): 373-85. doi: 10.1016/j.mcna.2017.10.013.
2. Pohlman GD, Phillips JM, Wilcox DT. Simple method of paraphimosis reduction revisited: point of technique and review of the literature. J Pediatr Urol. 2013; 9(1): 104-7. doi: 10.1016/j.jpurol.2012.06.012.
3. Herzog LW, Alvarez SR. The frequency of foreskin problems in uncircumcised children. Am J Dis Child. 1986; 140(3): 254-6. doi: 10.1001/archpedi.1986.02140170080036.
4. Palmisano F, Gadda F, Spinelli MG, Montanari E. Glans penis necrosis following paraphimosis: A rare case with brief literature review. Urol Case Rep. 2017; 16: 57-8. doi: 10.1016/j.eucr.2017.09.016.
5. Choe JM. Paraphimosis: current treatment options. Am Fam Physician. 2000; 62(12): 2623-6, 2628.
6. Jones SA, Flynn RJ. An unusual (and somewhat piercing) cause of paraphimosis. Br J Urol. 1996; 78(5): 803-4. doi: 10.1046/j.1464-410x.1996.25435.x.
7. Barmadisatrio, Wisnu Sutarja N, Okvita Wiyog I. Staged repair on a neglected paraphimosis in a 5-year-old-male. J Pediatr Surg Case Reports. 2021; 72(2): 1019852021. doi: 10.1016/j.epsc.2021.101985.
8. Filippone LM. Diagnosis: Paraphimosis. Emerg Med News. 2005; 27(9): 18.
9. Little B, White M. Treatment options for paraphimosis. Int J Clin Pract. 2005; 59(5): 591-3. doi: 10.1111/j.1742-1241.2004.00356.x.
10. Burstein B, Paquin R. Comparison of outcomes for pediatric paraphimosis reduction using topical anesthetic versus intravenous procedural sedation. Am J Emerg Med. 2017; 35(10): 1391-5. doi: 10.1016/j.ajem.2017.04.015.
11. Barberan Parraga C, Peng Y, Cen E, Dove D, Fassassi C, Davis A, et al. Paraphimosis pain treatment with nebulized ketamine in the Emergency Department. J Emerg Med. 2022; 62(3): e57-9. doi: 10.1016/j.jemermed.2021.12.011.
12. Smoler H. Zur konservativen Behandlung der Paraphimose [Conservative therapy of paraphimosis]. Z Allgemeinmed. 1972; 48(13): 657.
13. Fligelstone LJ, Wanendeya N, Palmer BV. Osmotic therapy for acute irreducible stoma prolapse. Br J Surg. 1997; 84(3): 390. doi: 10.1046/j.1365-2168.1997.02594.x.
14. Myers JO, Rothenberger DA. Sugar in the reduction of incarcerated prolapsed bowel. Report of two cases. Dis Colon Rectum. 1991; 34(5): 416-8. doi: 10.1007/BF02053694.
15. González Fernández M, Sousa Escandon MA. Azúcar: tratamiento de elección en la parafimosis irreductible. Actas Urol Esp. 2001; 25(5): 393-5. doi: 10.1016/s0210-4806(01)72638-1.
16. Anand A, Kapoor S. Mannitol for paraphimosis reduction. Urol Int. 2013; 90(1): 106-8. doi: 10.1159/000343737.

SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas
Vol. 3. No. 2. May - August 2024

Emerg Pediatr. 2024; 3(2): 103-105

GRUPOS DE TRABAJO

The Poisoning Working Group of the Spanish Society of Pediatric Emergency Medicine: over 20 years walking together

Beatriz Azkunaga[1], Lidia Martínez[2], Juan Carlos Molina[3], Santiago Mintegi[1] and the Poisoning Working Group of the Spanish Society of Pediatric Emergency Medicine

[1]Hospital Universitario Cruces. Barakaldo, Bizkaia. [2]Hospital Sant Joan de Déu. Barcelona. [3]Hospital Infantil Universitario Niño Jesús. Madrid

The Poisoning Working Group of the Spanish Society of Pediatric Emergency Medicine (GTI-SEUP, according to the Spanish abbreviation) currently comprises 59 hospitals across Spain. Its origins can be traced back to 2001, when Dr. Mintegi of Cruces University Hospital, a pediatric emergency physician with extensive research experience in the field of poisonings and the first coordinator of the GTI-SEUP, led a multicenter study involving 17 Spanish hospitals. This study provided valuable insights into the epidemiology and management of poisonings in Pediatric Emergency Departments (PED) in Spain[(1)].

In this study, poisoning accounted for 0.28% of all ED visits, with two distinct age groups identified. The first and largest group consisted of preschool children who ingested potentially toxic substances, mainly drugs, unintentionally due to their natural exploratory behavior. The second group comprised patients over 12 years of age who voluntarily came into contact with substances, either for recreational purposes –mainly alcohol and/or illegal drugs– or, to a lesser extent, for suicidal purposes through drug ingestion. In addition, this initial study identified variability in the management of poisoned pediatric patients across the different hospitals included in the study, as well as deficiencies in this management[(1)].

TOXICOLOGY OBSERVATORY

Created in October 2008 and initially comprising 37 pediatric emergency departments, the Toxicology Observatory was designed to better understand the epidemiological trends of pediatric poisonings and their management in EDs. The first analysis was conducted one year after its implementation, revealing the global characteristics of childhood poisonings, the most frequent mechanisms of poisoning, and the main substances involved[(2)].

Subsequent studies have clarified various aspects of poisonings, from defining profiles[(3)] to describing the predominant poisonings in each age group. In 2012, an analysis of poisonings in children under 7 years of age[(4)] revealed significant differences based on the substance involved, such as drugs or household products. Later studies indicated that these substances were often not stored safely or kept out of children's reach, increasing their danger[(5)].

On the other hand, the Observatory has also noted changes in poisonings in childhood, such as the substitution of benzodiazepines[(6)] for paracetamol as the main drugs involved globally, and the variability of toxic substances according to territories within Spain[(7)]. This variability makes it easier to identify specific measures to be developed for each territory. Additionally, there has been an increase in alcohol intoxications[(8)] among adolescents and preadolescents in the first decade of the creation of the GTI-SEUP, a concerning trend and a priority for decision-making by health managers, educators, and the families themselves. In this same group, about 9% had also had contact with illegal substances, especially cannabis.

Nevertheless, regarding intoxications by illegal drugs, a worrisome finding by the GTI-SEUP in 2016 was that about half of the intoxications by illegal drugs, especially cannabis, involved children under 3 years of age, probably exacerbated by the increasing use of such substance in the society in recent years[(9)].

Regarding the management of poisoning, the Toxicology Observatory has studied aspects related to the healthcare offered to the patient at the prehospital and hospital levels[(10)], particularly focusing on specific treatments such as

Received on June 27, 2024
Accepted on July 1, 2024

Corresponding author:
Dra. Beatriz Azkunaga
E-mail: BEATRIZ.AZCUNAGASANTIBANEZ@osakidetza.eus

gastrointestinal decontamination[11] or the administration of antidotes[12].

Finally, it should be mentioned that the Toxicology Observatory has also facilitated monitoring changes in poisonings in special situations, such as the recent global health emergency caused by the SARS-CoV-2 pandemic and the observed increase in poisonings with suicidal intent afterwards[13,14]. Furthermore, it has served as a model for international toxicological research[15,16].

QUALITY IMPROVEMENT: QUALITY INDICATORS AND "DO-NOT-DO" ACTIONS

In 2010, the SEUP Poisoning Working Group, led by Dr. Martínez of the Hospital Sant Joan de Déu, developed Pediatric Quality Indicators (QI) for the Emergency Healthcare of Patients with Suspected Poisoning. Twenty QIs, of which six were considered basic, were analyzed. After identifying deficiencies, corrective measures were implemented, including the creation in 2011 of a follow-up group for gastric lavage cases reported to the Toxicological Observatory and the publication in 2012 of the 3rd edition of the *Pediatric poisoning manual,* which included protocols for the most frequent and severe intoxications. Subsequently, the impact of the improvement actions was assessed through the QIs, and improvements in their results were observed[17].

With the intention of enhancing patient care, the GTI-SEUP compiled a list of actions that should not be taken in cases involving contact with potential toxic substances. This initiative aims to improve the quality of care by preventing unnecessary measures that can sometimes harm the patient[18].

SOURCES OF INFORMATION: PEDIATRIC POISONING MANUAL AND TOXSEUP

As mentioned earlier, the 3rd edition of the *Pediatric poisoning manual* was published in 2012 as a tool to facilitate information searches. However, years later, the GTI recognized the need to adapt to modern times and new medical practices, such as the use of electronic devices for efficiency in information retrieval. With the aim of adopting current and universally accessible tools, TOXSEUP was launched, a project led by Dr. Molina of Hospital Universitario Niño Jesús. TOXSEUP is a web-app developed to provide information in cases of potential drug intoxication.

In short, the work of the GTI-SEUP over all these years has focused on the development of various initiatives aimed at improving quality care for pediatric patients treated in EDs following potential poisoning incidents. To achieve this, in-depth knowledge of the epidemiology of pediatric poisoning in Spain through the Observatory of Toxicology was considered necessary. In addition, the management of poisoned patients has been extensively analyzed using QIs, supported by resources such as the do-not-do actions for a poisoned patient, the *Pediatric poisoning manual,* and the web-app TOXSEUP, tools available to all healthcare providers who treat poisoned children.

Finally, it should be noted that none of these achievements would have been possible without the collaboration of every member of the SEUP Poisoning Working Group, including those who were part of it from the outset and later followed other paths in their professional careers, as well as those who have joined this project more recently. Through their contributions, perseverance, and dedication, they have enabled the analyses presented in this article for the benefit of our children. Moreover, they serve as the foundation for new projects currently underway (Annex 1).

REFERENCES

1. Mintegi S, Fernandez A, Alustiza J, Canduela V, Mongil I, Caubet I, et al. Emergency visit for childhood poisoning: a 2-year prospective multicenter survey in Spain. Pediatr Emerg Care. 2006; 22(5): 334-8.
2. Azkunaga B, Mintegi S, Bizkarra I, Fernández J; The Intoxications Working Group of the Spanish Society of Pediatric Emergencies. Toxicology surveillance system of the Spanish Society of Pediatric Emergencies: first-year analysis. Eur J Emerg Med. 2011; 18(5): 285-7.
3. Paula Santiago P, Bilbao N, Martinez-Indart L, Mintegi S, Azkunaga B; Intoxications Working Group of the Spanish Society of Pediatric Emergencies. Epidemiology of acute pediatric poisonings in Spain: a prospective multicenter study from the Spanish Society of Pediatric Emergency Medicine. Eur J Emerg Med. 2020; 27(4): 284-9.
4. Azkunaga B, Mintegi S, Salmón N, Acedo Y, Del Arco L; Grupo de Trabajo de Intoxicaciones de la SEUP. Intoxicaciones en menores de 7 años en España. Aspectos de mejora en la prevención y tratamiento. An Pediatr (Barc). 2013; 78(6): 355-60.
5. Bilbao N, Santiago P, Azkunaga B, Mintegi S; Grupo de Trabajo de Intoxicaciones de la Sociedad Española de Urgencias de Pediatría. Intoxicaciones agudas no intencionadas asociadas a recipientes no originales. An Pediatr (Barc). 2016; 85(2): 102-4.
6. Zubiaur O, Salazar J, Azkunaga B, Mintegi S; Grupo de Trabajo de Intoxicaciones de la SEUP. Ingesta de psicofármacos: causa más frecuente de intoxicaciones pediátricas no intencionadas en España. An Pediatr (Barc). 2015; 83(4): 244-7.
7. Salazar J, Zubiaur O, Azkunaga B, Molina JC, Mintegi S; Grupo de Trabajo de Intoxicaciones de la Sociedad Española de Urgencias de Pediatría. Diferencias territoriales en las intoxicaciones agudas en menores de 14 años en España. An Pediatr (Barc). 2015; 82(1): e39-43.
8. Azkunaga B, Mintegi S, Del Arco L, Bizkarra I; Grupo de Trabajo de Intoxicaciones Sociedad Española de Urgencias de Pediatría. Changes in the epidemiology of poisonings attended in Spanish pediatric emergency departments between 2001 and 2010: increase in ethanol intoxications. Emergencias. 2012; 24: 376-9.
9. Azkunaga B, Crespo E, Oliva S, Humayor J, Mangione L. Intoxicaciones por droga ilegal en niños de corta edad en los servicios de urgencias pediátricos españoles. An Pediatr (Barc). 2017; 86(1): 47-9.
10. Salazar J, Zubiaur O, Azkunaga B, Molina JC, Mintegi S; Grupo de Trabajo de Intoxicaciones de la Sociedad Española de Urgencias de Pediatría. Atención prehospitalaria en las intoxicaciones agudas pediátricas en España. Emergencias. 2017; 29(3): 178-1.
11. Velasco R, Palacios M, Salmón N, Acedo Y, Del Arco L, Azcunaga B, Mintegi S; Intoxication Working Group of Spanish Society of Pediatric Emergencies. Impact of a working group on gastroin-

testinal decontamination in Spanish emergency departments. Eur J Emerg Med. 2014; 21(3): 195-8.

12. Serrano I, García M, Mintegi S, Azkunaga B; Grupo de Trabajo de Intoxicaciones de la Sociedad Española de Urgencias de Pediatría. Idoneidad de los antídotos administrados en los servicios de urgencias pediátricos en España. Emergencias. 2021; 33(6): 479-81.
13. Azkunaga B, Echarte P, Zumalde A, Mintegi S. Intentional self-poisoning increase in the emergency department in Spain during the COVID-19 pandemic. An Pediatr (Barc). 2023; 98(1): 67-9.
14. Algarrada Vico L, Martínez-Sánchez L, Baena Olomí I, Benito Caldés C, Rodríguez Varela A, López-Corominas V, et al. Estudio multicéntrico sobre las características sociales, epidemiológicas y clínicas en las intoxicaciones con finalidad suicida en adolescentes. Emergencias. 2024 [En prensa].
15. Mintegi S, Azkunaga B, Prego J, Qureshi N, Dalziel SR, Arana-Arri E, et al; Pediatric Emergency Research Networks (PERN) Poisoning Working Group. International epidemiological differences in acute poisoning in paediatric emergency departments. Pediatr Emerg Care. 2019; 35(1): 50-7.
16. Mintegi S, Dalziel SR, Azkunaga B, Prego J, Arana-Arri E, Acedo Y, et al; Pediatric Emergency Research Networks (PERN) Poisoning Working Group. International variability in gastrointestinal decontamination with acute poisoning. Pediatrics. 2017; 140(2): e20170006.
17. Martínez L, Trenchs V, Azkunaga B, Nogué S, Ferrer N, García E, et al; Grupo de Trabajo de Intoxicaciones de la SEUP. Impacto de acciones de mejora desarrolladas a partir de indicadores de calidad en el tratamiento de las intoxicaciones agudas pediátricas. Emergencias. 2016; 28(1): 31-7.
18. Martínez-Sánchez L, Angelats-Romero CM, Azkunaga-Santibañez B, Barasoain-Millán A, López-Ávila J, Molina-Cabañero JC, et al. Acciones que no hay que hacer ante un paciente que ha contactado con un posible tóxico. An Pediatr (Barc). 2021; 94(5): 285-92.

ANNEX 1. Members of the SEUP Poisoning Working Group.

- H.U. Tajo: C.M. Hinojosa Mateo
- H. Quirón Bizkaia: P. Oliver
- H.U. Arnau de Vilanova: N. Pociello
- H.U. Basurto: I. Rodriguez Albarrán
- H. Cabueñes: P. Rodriguez, A. García, M. Morán
- H.U. Carlos Haya: S. Oliva
- C.H. Navarra: M. Palacios, N. Clerigué
- C.H. Jaén: T. Del Campo
- C.A.U. León: A.G. Andrés, M. Muñiz
- C.S. Parc Taulí: I. Baena, S. Bajja
- H.U. Cruces: S. Mintegi, J. Ramirez, J. Askaiturrieta
- H.U. Doce de Octubre: S. Mesa
- H.U. Donostia: J.A. Muñoz, I. Muñoz
- H.U. Dr. Peset: A. Rodriguez
- H. Francesc de Borja: C.M. Angelats, I. Villaplana
- Fundació Sant Hospital de la Seu d'Urgell: J. Astete
- H.U. Fundación Alcorcón: A. Barasoain
- H.U. Gregorio Marañón: P. Vázquez
- H. Infanta Cristina: M.D. Rodríguez
- H. Infanta Elena: T. Gómez C, Nuñez
- H. Terrassa: F. Doménech
- H. Laredo: A. Jorda, B. Vega
- H. Mendaro: L. Herrero
- H.U. Mutua Terrassa: A. Pizzá
- H.U. Niño Jesús: J.C. Molina
- H. Materno-Infantil Las Palmas de Gran Canaria: L. Mangione
- H. Materno-Infantil Badajoz: L. Ramiro
- C. Asistencial Ávila: S. De Pedro
- H. Montepríncipe, H. Sanchinarro, H. Torrelodones, H. Puerta del Sur: I. González
- H. Príncipe de Asturias: M.A. García
- H.U. Puerta de Hierro: C. Benito, P. Armero
- H. Rey Juan Carlos: G. Sabrido, P. Bello
- H.U. Río Hortega: I. Bullón
- H. Sant Joan de Dèu, Xarxa Hospitalaria i Universitaria de Manresa, Fundació Althaia: E. Botifoll, Z. Lobato
- H.U. Sant Joan de Déu: L. Martínez Sánchez, C. Luaces, L. Algarrada
- H. San Pedro: L. Martínez
- H.U. Salamanca: J. López
- H. Virgen de la Salud: E. Aquino
- H. Zumárraga: A. Pérez
- H.U. Politécnico La Fe: R. Señer
- H. Mataró: J. Baena
- H.U. Marqués de Valdecilla, H. Sierrallana: A. Peñalba
- H. Gernika-Lumo: A. Alday
- H. Miguel Servet: C. Campos
- H.U. Son Espases: V. López
- C. Asistencia Soria: N. Muñoz
- H. Infantil La Paz: B. De Miguel
- Hospital C. U. Valencia: P. Khodayar
- H. Severo Ochoa: A.M. Angulo
- HU General de Villalba: E. Casado
- HU Santa Lucía: M.E. Ordoñez
- HU Virgen del Rocío: I. Martínez
- Hospital Infanta Leonor: A.N. Angulo
- HU Central de Asturias: R. Fernández
- H. de la Santa Creu i Sant Pau: I. Cinta

SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas
Vol. 3. No. 2. May - August 2024

Emerg Pediatr. 2024; 3(2): 106-107

LETTER TO THE EDITOR

Pediatric Emergency Resident/Fellow Grant

Guillem Brullas Badell[1], Natalia Lopera Múnera[2]

[1]Residente de cuarto año de Pediatría. Hospital Sant Joan de Déu. Barcelona, España. [2]Fellow de segundo año de Emergencias Pediátricas. Hospital Pediátrico Niños de Acosta Ñu. San Lorenzo, Paraguay

Dear colleague with an interest in Pediatric Emergencies,

We are Guillem Brullas Badell (fourth-year Pediatric resident at Hospital Sant Joan de Déu de Barcelona, Spain) and Natalia Lopera Múnera (second-year Pediatric Emergency fellow at Hospital Pediátrico Niños de Acosta Ñu, San Lorenzo, Paraguay). In 2024 we received the "Pediatric Emergency Resident/Fellow Grant" awarded by Sociedad Española de Urgencias Pediátricas (SEUP) and by Sociedad Latinoamericana de Emergencias Pediátricas (SLEPE) respectively, in conjunction with Cincinnati Children's Hospital. This grant has provided us with a great opportunity for personal and professional growth, and it could do the same for you.

Thanks to this grant, we experienced two valuable opportunities for our training in Pediatric Emergencies. The first was attending the Emergency Department at Cincinnati Children's Hospital, in Ohio, USA, as observers for one week. During this time, we had the chance to learn about their medical protocols and their way of working, in some incredible spaces, with patient and family-centered care dynamics, even in moments of greatest medical urgency. One of the things that impressed us the most was their critical patient stabilization rooms and the organization within them, where despite the high number of people involved, everyone had a clearly defined role and functioned in a coordinated manner, ensuring the best patient care; we noticed how this organized and structured way of working was maintained even in rare situations, thanks to constant simulations and subsequent debriefings. This experience provided us with new knowledge and ideas about Pediatric Emergencies that we could later share in our hospitals.

The second experience was attending the Pediatric Emergency Medicine Fellows Conference in Cleveland (Ohio, USA), which featured high-level presentations and workshops by leading global figures in Pediatric Emergencies. The focus of this conference is directed towards training in non-theoretical knowledge and skills such as leadership, communication, empathy, and teamwork, among others. These skills are difficult to learn individually but are just as important as theoretical knowledge to ensure optimal patient care in critical environments like Pediatric Emergency departments. Through the various conferences, we were able to understand Pediatric Emergencies as a comprehensive subspecialty, from which educational, collaborative research, global health, management, and patient advocacy projects can be developed. Additionally, during this conference, we had the opportunity to present the research studies we were developing in our hospitals in small groups of fellows and attendings and receive feedback on how to improve certain aspects of the project. We both received relevant suggestions to apply to our research projects and achieve better results.

Thanks to this experience, we were also able to learn about the training programs in Pediatric Emergencies, both in pediatric residency and fellowship. In these programs, we found structured curriculum with extensive theoretical-practical content and simulation, but additionally, with significant emphasis on communication, leadership, and teamwork skills. We also had the chance to interact with many Pediatric Emergency fellows from all over the United States, with whom we exchanged enriching experiences regarding our work and training.

Annually, there is one grant available from SEUP and another from SLEPE. The requirements for both societies to apply for the grant are being enrolled in a training program directed towards Pediatric Emergencies (during residency,

Received on July 9, 2024
Accepted on July 10, 2024

Corresponding author:
Dr. Guillem Brullas
E-mail: guillem.brullas@sjd.es

fellowship or master), having a research study in its initial phase, a minimum level of English (C1), and availability to travel to the United States on the agreed dates for the conference.

In summary, we would like to encourage all those professionals in training who, like us, are considering a path in Pediatric Emergencies to apply for this grant, as it will surely be a very enriching experience.