

The phenomenon of needle spiking and drug-facilitated sexual assault

El fenómeno de los pinchazos y la sumisión química

Guillermo Burillo-Putze^{1,2}, Emilio Salgado³, Coral Suero⁴, Iñaki Santiago⁵, Miguel Galicia^{2,3}, Andrea Díaz-Concepción⁶, Beatriz Martín Pérez⁷, Rosa Hueso⁸, Adriana Gil-Rodrigo⁹, Santiago Kassem¹⁰, Maria Àngels Gispert¹¹, Iria Miguens¹², Cesáreo Fernández-Alonso¹³, August Supervía¹⁴ (en representación del grupo SEMESTOX*)

Author Affiliations:

¹Departamento de Medicina Física y Farmacología, Universidad de La Laguna, Tenerife, Spain. ²Red de Investigación Atención Primaria de Adicciones (RIAPAD). ³Unidad de Toxicología Clínica, Área de Urgencias, Hospital Clinic, Barcelona, Spain. ⁴Servicio de Urgencias, Hospital de la Axarquía, Málaga, Spain. ⁵Servicio de Urgencias, Hospital Universitario de Navarra, Pamplona, Spain. ⁶Servicio de Urgencias, Hospital Universitario de Canarias, Tenerife, Spain. ⁷Servicio de Urgencias, Hospital Universitario Río Hortega, Valladolid, Spain. ⁸Servicio de Urgencias, Hospital Universitario La Fe, Valencia, Spain. ⁹Servicio de Urgencias, Hospital General Universitario Dr. Balmis, Instituto de Investigación Sanitaria y Biomédica de Alicante (ISABIAL), Alicante, Spain. ¹⁰Hospital Rey Juan Carlos, Móstoles, Madrid, Spain. ¹¹Servicio de Urgencias, Hospital Universitari Dr Josep Trueta, Girona, Spain. ¹²Servicio de Urgencias, Hospital Universitario Gregorio Marañón, Madrid, Spain. ¹³Servicio de Urgencias, Hospital Clínico San Carlos, Madrid, Spain. ¹⁴Servicio de Urgencias, Unidad funcional de Toxicología Clínica, Hospital del Mar, Barcelona, Spain.

Corresponding Author:

Guillermo Burillo-Putze. Dpto. de Farmacología. Ofra, s/n. 38320 La Laguna, Tenerife, Spain.

E-mail:
gburillo@ull.edu.es

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Introduction

At the beginning of July 2022, during the San Fermín Festival in Pamplona (Spain), the media reported alleged cases of chemical submission following subcutaneous/intramuscular needle pricks and the possible inoculation of some substance into young women.¹ The news grew exponentially, parallel to the spread of this phenomenon throughout the rest of Spain, associated with large popular festivals or nightlife venues. This type of aggression appeared to have been imported from France and the United Kingdom, among other countries, where it had occurred in previous years.^{2,3} Immediately, social media and news outlets amplified the needle-prick phenomenon, although contact with clinical toxicology and emergency medicine experts, among other professionals, made it possible to place the phenomenon in its proper context. In this way, the social alarm generated could be reduced and the concept of chemical submission clarified.⁴

The Data

In a tally of news reports that appeared between July and August 2022 regarding needle pricks in recreational environments, we collected around 300 cases treated in emergency departments, with subsequent police reporting, in practically all Spanish autonomous communities.⁵ Our working group SEMESTOX, through the REDURHE registry, has documented about 80 cases, whose basic characteristics are summarized in [Table 1](#). Some cases had already been treated in May 2022.

Despite the victims' arrival at the emergency department shortly after the incident (within the detection period for short-half-life substances),⁶ in no case was the presence of any of the usual toxic agents involved in chemical vulnerability demonstrated, except for those previously consumed by the patients—mainly alcohol.^{7,8} Although puncture wounds were confirmed, no secondary sexual

assault occurred. In addition to the victims' understandable concern, these aggressions were limited to local traumatic risk, infectious risk, and acute psychological disturbances.^{9,10} Therefore, the symptoms described were more consistent with vagal reactions, anxiety, or panic, rather than the inoculation of substances used to chemically incapacitate victims.

After the initial misinformation, in our opinion the situation was clarified thanks to these expert professionals and journalists with strong professional ethics. Although the results of forensic testing are still pending, the toxicology findings available to date have been negative. From a biophysical and pharmacological standpoint, it is unlikely that substances could be inoculated through a brief contact (needle prick) with a fine needle—one cannot transfer enough liquid volume to produce clinical effects, especially without the victim noticing pain or local swelling.^{11,12} Although it is true that there are highly potent drugs capable of reducing consciousness, these are not easy for the general population to obtain.¹³ Furthermore, producing immediate and profound sedation would contradict the modus operandi of aggressors who use chemical submission to move the victim to another location without arousing suspicion and then perpetrate the crime.^{14,15}

Media impact

The press office of the Spanish Society of Emergency Medicine (SEMES) coordinated the media presence of clinical experts—members of the society directly involved in caring for these patients. A total of 273 media appearances occurred, including 26 television interviews, 12 radio appearances, 208 online news articles, and 27 print articles ([Figure 1](#)). In addition, multiple local interviews occurred outside SEMES coordination, but were conducted by society members. Through dissemination on social networks—both news items and infographics created in record time ([Fig-](#)

Table 1. Puncture cases treated within REDUrHE

	N = 80
Female gender	77.5%
Evidence of puncture wound (stab wound)	77.5%
Initial clinical presentation:	47.5%
vomiting	
drowsiness	
paresthesia	
dizziness	
hypotension	
Presence of alcohol (quantitative blood test)	50%
Presence of illegal drugs (qualitative urine analysis)	5%
Sexual assault	0%
Extraction of samples for forensic analysis	62.5%
HIV prophylaxis	87.5%

ure 2)—the estimated total audience reached 85.2 million people. On a single day, August 6th, during peak vacation season, there were 72 media impacts. Emergency medicine never rests; it never closes (7/24/365). Of course, we were not the only ones—other groups and professionals also made excellent contributions, all aligned with the same toxicological, clinical, and women’s rights perspective.¹²

If there is something positive to highlight in this deplorable practice of misogynistic terrorism (or, being charitable, a cruel prank), it is that the media sought out expert professionals and scientific societies, which helped dispel misinformation and contextualize this practice from a toxicological,

Table 2. Approach to news about punctures

Initial media coverage.
Spread of the incident to other parts of Spain.
Public alarm.
Rumors.
Search for experts.
Focus on chemical submission.
Little forensic information.
Public education on chemical vulnerability and its prevention.

clinical, and social standpoint. On the other hand, the concept of chemical submission was clarified for the public, correcting early news and headlines. As a result, people were informed about the practices, contexts, and commonly involved substances, as well as the high incidence of opportunistic chemical submission, fundamentally mediated by consuming large amounts of alcohol within a short period of time (binge drinking) (Table 2).^{6-8,10,14,15}

At the most recent European and American clinical toxicology conferences, no presentations addressed this practice, referred to in the foreign press as needle-spiking.^{16,17} There is therefore room for further in-depth study.

Another issue repeatedly raised by the press was the existence of protocols for caring for victims of chemical submission and sexual assault. These protocols do exist; they have been prepared jointly and in coordination with other stakeholders involved in such cases (police, forensic specialists, etc.). In this context, they have been reviewed

**Figure 1.** SEMES–Needle-Spiking Media Metrics.

Volume: refers to the number of media impacts obtained. Audience: the number of people who have read our articles (calculated based on the typical audience size of each publication).

Advertising value: equivalent to the cost that would have been incurred if the same space had been purchased as advertising. Sentiment: evaluates the tone of the message and how the brand or organization is perceived by the reader (in this case, SEMES and its various spokespersons). In this regard, sentiment is 100% positive (a negative example would be news suggesting a lack of commitment from emergency professionals on this issue).



Figure 2. SEMES infographics on needle pricks and chemical submission.

and recalled by health care professionals and authorities and made known to victims of chemical vulnerability.¹⁸⁻²⁰

Women are not alone; even if we cannot fully reduce

the incidence of chemical submission (although we try), we can provide professional, swift, coordinated care with the sensitivity required in this delicate situation.²¹

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ADDENDUM

SEMESTOX Group Investigators: Juan Mariano Aguilar Mulet, Fernando Alonso Ecenarro, Cesáreo Álvarez Rodríguez, Montserrat Amigó Tadín, María Dolores Aranda, Carmen del Arco Galán, Angel Bajo Bajo, Guillermo Burillo Putze, Nayra Cabrera González, Francisco Callado Moro, Rafael Calvo Rodríguez, César Cinesi Gómez, Benjamín Climent Díaz, Francisca Córdoba López, Antonio Dueñas Laita, Patricia Eiroa Hernández, Cesáreo Fernández Alonso, Amparo Fernández de Simón Almela, Ana Ferrer Dufol, Miguel Galicia Paredes, Francisco García Val de Santos, Adriana Gil Rodrigo, Clara Girónés Bredy, Blas Giménez Fernández, María Angels Gispert Ametller, Aceysle Gonzalez Díaz, Carmen Rosa Hernández Rodríguez, Rosana Hueso Pinazo, Dima Ibrahim Achi, Santiago Kassem García, Carmen Laguna Cárdenas, María de los Ángeles López Hernández, Beatriz Martín Pérez, Lidia Martínez-Sánchez, Sebastián Matos Castro, Iria Miguens Blanco, Óscar Miró, Valle Molina Samper, Rocío Moyano García, Santiago Nogué Xarau, Juan Ortega Pérez, Oriol Pallàs, Miguel Angel Pinillos Echeverría, Jordi Puigurriguer Ferrando, Cristina Ramió Lluch, Belén Rodríguez Mir-randa, Rodolfo Romero Pareja, Francisco José Ruiz Ruiz, Emilio Salgado, Iñaki Santiago Aguinaga, Coral Suero Méndez, August Supervia Caparrós, Laura Torres Pallarés, M^a José Venegas de L'Hotellerie, Juan Antonio Vega Reyes.

REFERENCES

1. Cuatro mujeres denuncian pinchazos en la calle y una posible sumisión química en los Sanfermines. (Accessed 20 September 2022). Available at: <https://navarra.elpais.com/articulo/san-fermin-fiesta-pamplona-2022/investigan-posibles-casos-pinchazos-mujeres-sanfermines/20220710154102422252.html>
2. The Guardian. Needle spiking reports to UK police exceed 1,300 in six months. (Accessed 20 September 2022). Available at: <https://www.theguardian.com/uk-news/2022/jan/26/needle-spiking-reports-to-uk-police-exceed-1300-in-six-months>
3. The Washington Post. 'Needle spiking' fears rise in Europe, but crime 'really difficult' to trace. (Accessed 20 September 2022). Available at: <https://www.washingtonpost.com/world/2022/06/07/needle-spiking-europe-britain-france/>
4. Burillo-Putze G, López-Hernández A, Expósito-Rodríguez M, Dueñas-Laita A. Sumisión química, oportunista o premeditada. *Med Clin (Barc)*. 2013;140:139.
5. 20 minutos. Los expertos explican los interrogantes detrás de los pinchazos a mujeres en discotecas: "Lo que se está inoculando es miedo". (Accessed 20 September 2022). Available at: <https://www.20minutos.es/salud/actualidad/un-experto-explica-los-interrogantes-detras-de-los-pinchazos-a-mujeres-lo-que-se-esta-inoculando-es-miedo-5044021/>
6. Fernández Alonso C, Quintela Jorge O, Bravo Serrano B, Santiago Sáez AE. La importancia del factor tiempo en el análisis toxicológico de casos de sospecha de sumisión química en un servicio de urgencias hospitalario. *Emergencias*. 2019;31:65-6.
7. Navarro Escayola E, Vega Vega C, Bañón González R, Sanvicens Díez N. Presencia de sustancias psicoactivas en las víctimas de violencia sexual en la provincia de Alicante (Spain) durante los años 2016-2020. *Rev Española de Medicina Leg*. 2022 (en prensa).
8. Fernández Alonso C, Quintela Jorge O, Bravo Serrano B, Santiago Sáez AS. Sospecha de sumisión química en un servicio de urgencias hospitalario: procedimiento de actuación y análisis toxicológico en una serie de casos. *Emergencias*. 2016;28:426-7.
9. Cruz-Landeira A, Quintela-Jorge O, López-Rivadulla M. "Sumisión química: epidemiología y claves para su diagnóstico". *Med Clin (Barc)*. 2008;131:783-9.
10. Fernández Alonso C, Quintela Jorge Ó, Ayuso Tejedor S, Santiago-Sáez AE, González Armengol JJ. Intoxicación aguda por nuevas drogas de abuso en probables casos de sumisión química oportunista o mixta y chemsex en pacientes con VIH atendidos en urgencias. *Emergencias*. 2019;31:289-90.
11. Diario de Pontevedra. "No dudo de los pinchazos a mujeres, pero sí de que sean casos de sumisión química". (Accessed 20 September 2022). Available at: <https://www.diariodepontevedra.es/articulo/sociedad/dudo-pinchazos-mujeres-que-sean-casos-sumision-quimica/202208051117031212920.html>
12. Energy Control plantea dudas sobre la administración de sustancias psicoactivas a través del método del pinchazo con el fin de cometer delitos sexuales. (Accessed 20 September 2022). Available at: <https://energycontrol.org/energy-control-plantea-dudas-sobre-pinchazo-para-delitos-sexuales/>
13. Galicia M. New psychoactive substances as drugs of abuse: the situation in Spain. *Emergencias*. 2022;34:163-4.
14. Xifró-Collsamata A, Pujol-Robinat A, Barbería-Marcalain E, Arroyo-Fernández A, Bertomeu-Ruiz A, Montero-Núñez A, et al. Estudio prospectivo de la sumisión química con finalidad sexual en Barcelona. *Med Clin (Barc)*. 2015;144:403-9.
15. Becerra García JA. Epidemiología de la sumisión química con fines sexuales. *Med Clin (Barc)*. 2015;144:401-2.
16. 42nd International Congress of the European Association of Poisons Centres and Clinical Toxicologists (EAPCCT) 24-27 May 2022, Tallinn, Estonia. *Clin Toxicol*. 2022;60(sup 1):1-108.
17. North American Congress of Clinical Toxicology (NACCT) 2022. *Clin Toxicol*. 2022;60(sup 2):1-162.
18. Ministerio de Justicia. Gobierno de Spain. Guía de buenas prácticas para la actuación forense ante la víctima de un delito facilitado por sustancias psicoactivas: intervención ante la sospecha de sumisión química. (Accessed 20 September 2022). Available at: <https://www.mjusticia.gob.es/es/AreaTematica/DocumentacionPublicaciones/InstListDownload/GuiaBuenasPracticas.pdf>
19. Servicio Madrileño de Salud. Dirección General de Coordinación de la Asistencia Sanitaria. Protocolo de actuación ante sospecha de sumisión química. Abril 2022. (Accessed 20 September 2022). Available at: https://www.academia.edu/40695333/Servicio_Madrile%C3%B1o_de_Salud_Direcci%C3%B3n_General_de_Coordinaci%C3%B3n_de_la_Asiencia_Sanitaria_PROTOCOLO_DE_ACTUACI%C3%93N_ANTE_SOSPECHA_DE_SUMISI%C3%93N_QU%C3%8DMICA
20. Servicio Andaluz de Salud. Consejería de Salud y Consumo. Protocolo de actuación ante sospecha de sumisión química por objeto punzante. (Accessed 20 September 2022). Available at: <https://www.sspa.juntadeandalucia.es/servicioandaluzdesalud/archivo-comunicado/protocolo-de-actuacion-ante-sospecha-de-sumision-quimica-por-objeto-punzante>
21. Dirección General de Programas Asistenciales. Servicio Canario de la Salud. Protocolo de atención a mujeres víctimas de agresión sexual. (10/12/2021). (Accessed 20 September 2022). Available at: <https://www3.gobiernodecanarias.org/sanidad/scs/contenidoGenerico.jsp?idDocumento=d637063f-6abf-11eb-8314-f34dfa241d03&idCarpetaa=ae273cd1-b385-11e9-82f7-8d5cff9227e6>