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Current inconsistencies in the reporting of cases of intraabdominal retained textile foreign bodies

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Abstract

Background: It is assumed that the incidence of textile foreign bodies (TFB) unintentionally left in abdominal cavity is underreported, mostly due to the legal implications of their detection.

Material and methods: One hundred thirty-five responses were received to a specially developed anonymous questionnaire on the TFB problem, including medico-legal aspects. Of the total number of respondents, 81 were surgeons and 54 – gynecologists.

Results: Over 80% of respondents consider that if TFB was removed from abdominal cavity during the surgical intervention, it should be indicated in the final diagnosis. At the same time, the fact of detecting and removing TFB retained in abdomen in the real cases known by respondents was reflected in the surgical report and in diagnosis in only 49.1%. False description in case of detection and removal of intra-abdominal TFB admits 29.6% from total number of respondents, but only 24.5% with a shorter length of work (<15 years), and 40.7% – with a work experience over 15 years.

Conclusions: Surprisingly, about 20% of respondents consider it justified not to indicate retained TFB in the final diagnosis. Moreover, the real frequency of TFB diagnosis concealment is 1.6 times higher and sharply contradicts the declared intentions about the need to report the true cause of pathology. Almost half of surgeons with a long lasting work experience allow a false description of intraoperative findings and, as a result, the official diagnosis.

Key words: textile foreign body, surgical report, underreporting, false description.

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Introduction

Threat of medical errors is omnipresent in the work of health professionals. In modern days the reduction of medical errors is becoming main priority of different medical organizations as well as healthcare policy makers and different patients' rights organizations. It is generally considered that the incidence and different outcomes of specific types of surgical errors are, in most cases, well described, but the knowledge of why these errors occur remains unanswered [1]. Considered as one of the most baffling examples of serious surgical errors is the manifestation of retained surgical foreign bodies (sponges, meshes, instruments, needles and other surgical consumables) [1, 2]. Textile foreign bodies (TFB) can cause serious physical complications as well as moral harm to the patient and can also lead to serious professional and medico-legal consequence [2-4]. TFB events are generally believed to occur once from 1000 up to 18000 surgeries [5-9] of which 0.3-1 events in 1000 abdominal surgical interventions [3], however this is highly likely an underestimation or underreporting [8, 10-12]. In the general population, the rates of TFBs are mostly identified in abdominal surgery followed by gynecologic, vascular, and urologic procedures

[5, 6, 13, 14]. This study examines the experience of surgeons in the understanding, reporting, problem identification, preventive strategies, legal status of TFBs on surgical practice.

Material and methods

This study is a part of a PhD study in abdominal textilomas and was approved by the Ethics Committee of *Nicolae Testemitanu* State University of Medicine and Pharmacy, protocol No 48 of 12.02.2020. It was an online and live survey study. The questionnaire consists of 21 questions and was created using Microsoft Office Word and converted to online survey using Google Forms. The questionnaire was sent over emails to the members of *Nicolae Anestiadi* Surgeons Association of the Republic of Moldova as well as to Obstetrics and Gynecology surgeons, Urology, Vascular, Cardiothoracic, Pediatric and Oncologic surgeons. All the responses were voluntary, anonymous and confidential. The questionnaire was sent repeatedly so as to gather the most number of total possible answers by surgeons. There was no time limit of completion the survey.

The questionnaire was created in such a way so as to gather as much information as possible from surgeons and

consists of general questions, confirmation of a known case/cases of TFB, management of those cases and legal and organizational management of those and potentially other cases.

Results and discussion

Of 543 surgeons that were eligible to participate in the survey, 145 questionnaire answers were received. The respondents comprised 79 general surgeons (54.4%), 56 obstetrics and gynecologists (38.6%), 3 thoracic surgeons (2.0%) and one from urologists, pediatric surgeons, orthopedics and traumatology, vascular, oncologist, cardiac and ICU specialists (4.8%). Of all the respondents, 22 surgeons have work experience of less than 5 years (15.17%), 32 surgeons have work experience between 5-15 years (22.06%), 32 – between 15-25 years (22.06%), 33 – between 25-35 years (22.75%) and 26 have work experience of more than 35 years (17.93%). Institutional level of respondents work place is regional hospitals in 37 answers (25.51%), municipal hospitals in 41 answers (28.37%), republican hospitals in 59 answers (40.68%), departmental hospitals in 7 answers (4.82%) and private hospitals in one answer (0.68%).

Of all respondents, 97 (66.89%) encountered an event when a TFB was left unintentionally in the abdominal cavity, of these 8 (5.15%) respondents were with surgical experience of less than 5 years, 15 (15.46%) respondents with surgical experience of 5-15 years, 22 (22.68%) respondents with surgical experience of 15-25 years, 30 (30.92%) respondents with surgical experience of 25-35 years and 22 (22.68%) respondents with surgical experience of more than 35 years.

When the respondents were asked how many cases of TFB they encountered during surgery, 28 (19.31%) said they had never experienced textile foreign body during surgery, 44 (30.34%) respondents encountered at least one such case, 38 (26.20%) encountered two cases, 12 (8.27%) – 3 cases, 11 (7.58%) – 4 cases and 6 (4.13%) – 5 or more such cases and 2 (1.37%) – 10 cases. In one case the surgeon was aware of such case from a fellow surgeon and 5 (3.44%) did not answer.

In the questionnaire the answer of some surgeons that encountered different time span from the time a TFB was retained to the time of its extraction constituted “Some days” in 44 cases, “Some weeks” in 37 cases, “Some months” in 45 cases, “Some years” in 25 cases, and 30 did not give an answer.

Regarding the second surgery (extraction of TFB) 39 respondents answered that the foreign body was found accidentally during surgery, 53 respondents answered that the second surgery was performed because of complications that were caused by the TFB. In 33 answers the TFB was symptomatic and diagnosed using Computed Tomography (CT) or Ultrasonography (USG) and in 15 answers TFB was asymptomatic and diagnosed using CT or USG. In 15 answers the diagnosis of TFB was known before any diagnostic procedures. There were 29 respondents who did not answer.

In those known cases of repeated surgery for TFB the outcome was simple extraction with no postoperative complications or prolonged hospital stay in 79 answers. Prolonged hospital admission and pharmaceutical treatment

was present in 55 answers. The necessity of organ resection caused by TFB was present in 9 answers, with development of severe postoperative complications was present in 24 answers. Death of the patient caused by TFB was present in one answer only and 30 respondents did not answer.

There was an effort to ask surgeons their point of view of how they can describe, as an event, a case of TFB and the answers can be found in table 1.

Table 1. Distribution of surgeons' point of view of TFB based on proposed answer type

Types of answers	Answers (n=145), 100%
Medical accident	25 (17.24%)
Medical incident	29 (20%)
Adverse event	4 (2.75%)
Postoperative complication	11 (7.58%)
Medical deficiency	7 (4.82%)
Medical error	24 (16.55%)
Organizational error	11 (7.58%)
Medical neglect	22 (15.17%)
Malpractice	8 (5.51%)
Other	2 (1.37%)
No answer	2 (1.37%)

Interesting as well as worrying results were obtained when respondents were asked to answer the question if the detection, removal and final postoperative diagnosis were reflected in official postoperative protocol/documentation. In 57 (39.31%) answers by the respondents the official report on TFB extraction, description and diagnosis was absent in postoperative documentation, partially in 6 (4.13%) answers. The description of intraoperative findings, extraction and postoperative diagnosis were present in 60 (41.37%) answers. In 3 (2.06%) answers the surgeons did not know if the description was present in official documentation and 19 (13.10%) respondents did not wish to answer.

Another worrying result based on questionnaire answers was if the surgeons admit intentional, false description in case of TFB detection during surgery. In case of such an event, 48 (33.10%) respondents admit possible intentional falsification of documentation if such a case is detected, 91 (62.75%) respondents did not admit false postoperative description in official documentation and 7 (4.82%) respondents had doubts or partially admit potential falsifying of the report.

Unlike official documentation the reluctance to admit a TFB finding during surgery to the patient or patient's relatives is not as high as with official documentation. Nonetheless, 35 (24.13%) respondents consider not to inform the patient or his relatives of a TFB finding, 44 (30.34%) respondents consider to officially inform the patient or his representatives. A very big group of 63 (43.44%) respondents consider other circumstances that may or may not lead to informing the patient or his relatives and 3 (2.06%) respondents have other opinions.

A series of questions regarding who is responsible when

a TFB is retained unintentionally inside the abdominal cavity and what sanctions for those responsible should be applied are presented in table 2 and 3.

Table 2. Distribution of surgeons' point of view on whom lies the responsibility of TFB event

Types of answers	Answers (n=145, 100%)
Operating surgeon	36 (24.82%)
Scrub nurse	12 (8.27%)
Both (operating surgeon and scrub nurse)	36 (24.82%)
Entire surgical team	54 (37.24%)
Medical institution	4 (2.75%)
Nobody	2 (1.37%)
Other	1 (0.68%)

Table 3. Distribution of surgeons' point of view on which sanctions should apply in case of TFB event

Types of answers	Answers (n=145, 100%)
Internal professional discussion	118 (81.37%)
Disciplinary sanction	18 (12.41%)
Civil liability	2 (1.37%)
Criminal liability	0 (0%)
Other	6 (4.13%)
No answer	1 (0.68%)

Surgeons that knew cases of TFB were asked to answer about the consequences that members of the surgical team who accidentally left a TFB during surgery suffered when this event was uncovered: 28 respondents answered that there were no consequences, 94 respondents answered that the medical team had an internal professional trial and discussion, 11 respondents answered that administrative sanctions were applied against the surgical team, 3 respondents answered that civil liability was initiated against the surgical team, 2 respondents answered that criminal liability was initiated against the surgical team, 6 respondents did not know what consequences the surgical team suffered and 19 respondents did not answer.

When asked if the medical institution should also be responsible together with the surgical team when a petition or legal complaint arrives, 119 (82.06%) respondents agree that the medical institution should also be responsible whenever such actions occur, 25 (17.24%) respondents don't agree and one respondent was hesitant to answer.

A sensible topic such as retained foreign bodies needed an anonymous way to try to collect data from surgeons and as such a questionnaire was selected as the best way to obtain such information especially it was proven as the best and risk-free modality [15]. It is a well established fact that the incidence of TFB is underestimated and underreported and generally the only reliable source of these events comes from legal cases or medical case reports [1, 16, 17, 18]. Overall it is easy to understand as to why these events are so rarely discussed, it is difficult to establish a clear diagnosis [17, 19], it brings great legal consequences [1, 19] and these cases are

unlikely to be reported because of fear of malpractice repercussions [15-21]. In most cases the victims of such event is the patient, the physician and the medical institution [22].

The effect that physicians suffer from adverse surgical events is termed as the "second victim syndrome" [9, 23, 24]. Because TFB are classified as "never events" according to the National Quality Forum, physicians can suffer significant professional reputation damage and even the risk of indefensible litigation [5, 12, 25]. This leads to psychological and emotional burden on the surgeon and contributes to unwillingness to disclose RSI events [26].

A cross-sectional multi-center survey of surgeons revealed that intraoperative unfavorable events do cause serious emotional distress in 84% of respondents. Anger, embarrassment/shame, anxiety, guilt, sadness are the most frequently reported emotions expressed by physicians, with no correlation with years of experience [23]. Another survey demonstrated that fellow residents have a much greater risk of adverse consequences from their emotional suffering, in part due to greater self-perceived responsibility and fear of repercussions [24].

In an event when an unaccounted surgical item is lost or not retrieved during surgery and discovered later, surgeons may face a difficult decision of whether to perform a repeated surgery to remove the TFB or observe the patient. The operative surgeon may ask for intraoperative consults from a fellow surgeon that can be valuable help, but the decision to ask for assistance is ignored by the hesitation to publicize their medical error. Because of professional reputation concerns, many surgeons do not have the necessary motivation to report their surgical errors because of the risk of legal proceeding against them [12, 27].

A critical step in finding a way of preventing events with TFBs is accurate and sincere reporting of all such cases and also "near miss" events would also allow for a real evaluation of the efficiency of new possibilities in identifying TFBs. The present environment is lawsuit-motivated or lawsuit-oriented and as such created a real barrier for transparency, and because of it highlights the necessity for major shift in the system that TFB events are handled [23]. In majority of countries the blame of TFB events has, traditionally, been placed on the operating surgeon, however, there are reports that 90% of TFB events are the result of system or team error [9, 29]. As such a need arises for a more proactive system approach for prevention of TFB and should be implemented through continuous quality improvement with multiprofessional teams that participate in a meticulous review and careful observation of the event without attributing blame [30-32]. In changing the focus from blame assignment to finding of different strategies for prevention of such events, a more transparent environment may be created [33]. Standard protocols must involve the entire operating team and as such will improve outcomes and encourage to a more team-based mindset and spirit [9, 28, 33].

Another barrier to transparency that has been identified is the lack of standardized reporting [23]. The introduction of a standardized reporting system should be done in such a

way as to encourage reporting. These systems should have a considerable emphasis on promoting a supportive learning conditions and resolving safety issues, rather than being accusatory and hostile oriented. It is important as these unfortunate events have multiple origins rather than due to “one man” failures, incompetence or negligence [12, 23, 34, 35].

Conclusions

The healthcare system must be shifted towards a more proactive approach rather than to a more reactive one towards medical errors. For a continuous and stable reduction in the incidence of TFB events will be demanded improved preventative and recovery strategies. Such events are categorized as “never events”, which in return suggest that they are totally preventable. However, their ongoing occurrence in spite of many new protocols and regulations development proves what a complex and multifactorial this problem is. Present day literature leans on improving vigilance as well heavily backs historical methods of prevention. In present day reality TFB events prevention requires a serious system-based approach that depends on the entire surgical team and even then, human error and imperfections cannot be excluded and will always be present, and as such require the implementation of technological support.

References

- Gawande AA, Studdert DM, Orav EJ, et al. Risk factors for retained instruments and sponges after surgery. *N Engl J Med.* 2003;348(3):229-235. doi: 10.1056/NEJMsa021721.
- Tacyildiz I, Aldemir M. The mistakes of surgeons: “gossypiboma”. *Acta Chir Belg.* 2004;104(1):71-75. doi: 10.1080/00015458.2004.11679521.
- Hyslop JW, Maull KI. Natural history of the retained surgical sponge. *South Med J.* 1982;75(6):657-660. doi: 10.1097/00007611-198206000-00006.
- Imran Y, Azman MZ. Asymptomatic chronically retained gauze in the pelvic cavity. *Med J Malaysia.* 2005;60(3):358-359.
- Al-Qurayshi ZH, Hauch AT, Slakey DP, Kandil E. Retained foreign bodies: risk and outcomes at the national level. *J Am Coll Surg.* 2015;220(4):749-59. doi: 10.1016/j.jamcollsurg.2014.12.015.
- Stawicki SPA, Moffatt-Bruce SD, Ahmed HM. Retained surgical items: a problem yet to be solved. *J Am Coll Surg.* 2013;216(1):15-22. doi: 10.1016/j.jamcollsurg.2012.08.026.
- Lovrec VG, Cokan A, Lukman L, Arko D, Takač I. Retained surgical needle and gauze after cesarean section and adnexectomy: a case report and literature review. *J Int Med Res.* 2018;46(11):4775-80 doi: 10.1177/0300060518788247.
- Hacivelioglu S, Karatag O, Gungor AC, et al. Is there an advantage of three dimensional computed tomography scanning over plain abdominal radiograph in the detection of retained needles in the abdomen? *Int J Surg.* 2013;11(3):278-81. doi: 10.1016/j.ijssu.2013.01.009.
- Corrigan S, Kay A, O’Byrne K, Slattery D, Sheehan S, McDonald N, et al. A Socio-technical exploration for reducing & mitigating the risk of retained foreign objects. *Int J Environ Res Public Health.* 2018;15(4):714. <https://doi.org/10.3390/ijerph15040714>.
- Williams TL, Tung DK, Steelman VM, Chang PK, Szekendi MK. Retained surgical sponges: findings from incident reports and a cost-benefit analysis of radiofrequency technology. *J Am Coll Surg.* 2014;219(3):354-64. doi: 10.1016/j.jamcollsurg.2014.03.052.
- Stawicki SP, Evans DC, Cipolla J, et al. Retained surgical foreign bodies: a comprehensive review of risks and preventive strategies. *Scand J Surg.* 2009;98(1):8-17. doi: 10.1177/145749690909800103.
- Biolini DV, Rasslan S, Utiyama EM. Unintentionally retained foreign bodies after surgical procedures. Analysis of 4547 cases. *Rev Col Bras Cir.* 2016;43(1):12-7. <https://doi.org/10.1590/0100-69912016001004>.
- Jayadevan R, Stensland K, Small A, Hall S, Palese M. A protocol to recover needles lost during minimally invasive surgery. *J Soc Laparoendosc Surg.* 2014;18(4):e2014.00165. doi: 10.4293/JLS.2014.00165.
- Wang B, Tashiro J, Perez EA, Lasko DS, Sola JE. Hospital and procedure incidence of pediatric retained surgical items. *J Surg Res.* 2015;198(2):400-5. doi: 10.1016/j.jss.2015.03.054.
- Scriven A, Smith-Ferrier S. The application of online surveys for workplace health research. *J R Soc Promot Health.* 2003;123(2):95-101. doi: 10.1177/146642400312300213.
- Teixeira PG, Inaba K, Salim A, et al. Retained foreign bodies after emergent trauma surgery: incidence after 2526 cavitory explorations. *Am Surg.* 2007;73(10):1031-1034.
- Gonzalez-Ojeda A, Rodriguez-Alcantar DA, Arenas-Marquez H, Sanchez Perez-Verdia E, Chavez-Perez R, Alvarez-Quintero R, et al. Retained foreign bodies following intra-abdominal surgery. *Hepatogastroenterology.* 1999;46(26):808-12.
- Lincourt AE, Harrell A, Cristiano J, Sechrist C, Kercher K, Heniford BT. Retained foreign bodies after surgery. *J Surg Res.* 2007;138(2):170-4. doi: 10.1016/j.jss.2006.08.001.
- Yildirim S, Tarim A, Nursal TZ, Yildirim T, Caliskan K, Torer N, et al. Retained surgical sponge (gossypiboma) after intraabdominal or retroperitoneal surgery: 14 cases treated at a single center. *Langenbecks Arch Surg.* 2006;391(4):390-5. doi: 10.1007/s00423-005-0581-4.
- Kaiser CW, Friedman S, Spurling KP, Slowick T, Kaiser HA. The retained surgical sponge. *Ann Surg.* 1996;224(1):79-84. doi: 10.1097/0000658-199607000-00012.
- Jones SA. The foreign body problem after laparotomy. Personal experiences. *Am J Surg.* 1971;122(6):785-6. doi: 10.1016/0002-9610(71)90446-6.
- Weprin S, Crocerossa F, Meyer D, et al. Risk factors and preventive strategies for unintentionally retained surgical sharps: a systematic review. *Patient Saf Surg.* 2021;15(1):24. doi:10.1186/s13037-021-00297-3.
- Han K, Bohnen JD, Peponis T. The surgeon as the second victim? Results of the Boston Intraoperative Adverse Events Surgeons’ Attitude (BISA) study. *J Am Coll Surg.* 2017;224(6):1048-56. doi: 10.1016/j.jamcollsurg.2016.12.039.
- Marmon LM, Heiss K. Improving surgeon wellness: The second victim syndrome and quality of care. *Semin Pediatr Surg.* 2015;24(6):315-8. doi: 10.1053/j.sempedsurg.2015.08.011.
- Parelkar SV, Sanghvi BV, Shetty SR, Athawale H, Oak SN. Needle in a haystack: intraoperative breakage of pediatric minimal access surgery instruments. *J Postgrad Med.* 2014;60(3):324-6. doi: 10.4103/0022-3859.138823.
- Mahrn MA, Toeima E, Morris EP. The recurring problem of retained swabs and instruments. *Best Pract Res Clin Obstet Gynaecol.* 2013;27(4):489-95. doi: 10.1016/j.bpobgyn.2013.03.001.
- Luu S, Leung SOA, Moulton C. When bad things happen to good surgeons: reactions to adverse events. *Surg Clin North Am.* 2012;92(1):153-61. doi: 10.1016/j.suc.2011.12.002.
- Stelman VM, Alasagheirin MH. Assessment of radiofrequency device sensitivity for the detection of retained surgical sponges in patients with morbid obesity. *Arch Surg.* 2012;147(10):955-60. doi: 10.1001/archsurg.2012.1556.
- Stawicki SP, Cook CH, Anderson HL. Natural history of retained surgical items supports the need for team training, early recognition, and prompt retrieval. *Am J Surg.* 2014;208(1):65-72. doi: 10.1016/j.amjsurg.2013.09.029.
- Fencil JL. Guideline implementation: prevention of retained surgical items. *AORN J.* 2016;104(1):37-48. doi: 10.1016/j.aorn.2016.05.005.
- American College of Surgeons (ACS) Committee on Perioperative Care. Revised statement on the prevention of unintentionally retained surgical items after surgery. *Bull Am Coll Surg.* 2016;101(10):50-1.

32. Moynihan M, Moinzadeh A. Retained needle in the AirSeal trocar during robot-assisted laparoscopic radical prostatectomy: lessons learned. *J Endourol Case Rep.* 2018;4(1):105-7. doi: 10.1089/cren.2018.0034.
33. Goldberg JL, Feldman DL. Implementing AORN recommended practices for prevention of retained surgical items. *AORN J.* 2012;95(2):205-16. doi: 10.1016/j.aorn.2011.11.010.
34. Zejnullahu VA, Bicaj BX, Zejnullahu VA, Hamza AR. Retained surgical foreign bodies after surgery. *Open Access Maced J Med Sci.* 2017;5(1):97-100. <https://doi.org/10.3889/oamjms.2017.005>.
35. Sigakis C, Lantow B, Windham K, Meddings K, Lind KE, Suby-Long T. Sometimes it takes a village-reducing retained surgical items through multidisciplinary collaboration. *J Am Coll Radiol.* 2016;13(6):709-12. <https://doi.org/10.1016/j.jacr.2015.10.022>.

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Author's contributions

SG conceptualized the idea, designed the study, conducted literature review, designed the survey, interpreted the data and wrote the manuscript.

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The study was the author's initiative. The author is independent and takes responsibility for the integrity of the data and accuracy of the data analysis.

Ethics approval and consent to participate

The research project was approved by the Research Ethics Committee of *Nicolae Testemitanu* State University of Medicine and Pharmacy (Protocol No 48, 12.02.2020).

Conflict of Interests

No competing interests were disclosed.

