

Unexpected discovery of surgical gauze during a robotic radical prostatectomy identified as a capturing lymph node on magnetic resonance

Giovanni Battista Di Pierro, Bruno Bucca^{*}, Alessandro Sciarra, Francesco del Giudice, Marco Frisenda, Stefano Salciccia

Department "Materno Infantile e Scienze Urologiche", University Sapienza, Policlinico Umberto I, Rome, Italy

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ABSTRACT

Multiparametric magnetic resonance, plays a crucial role in several steps of the management of prostate cancer. Various factors could alter the interpretation and reduce the accuracy of MR. Among these the group of the retained surgical items, can produce serious implications for the health of patient, as well as medical-legal consequences. Here we report the case of a patient, with a prostate tumor, who performed a mp-MRI of the prostate, where it was reported as collateral finding, compatible thesis with lymphadenopathy. During robotic assisted radical prostatectomy, was found a gauze, which persisted asymptomatic, retained after a previous right inguinal hernioplasty.

1. Introduction

Given that multiparametric magnetic resonance (mpMR) today has crucial role in the management of prostate cancer (PC), it has been recognized that the expertise of the radiologist is crucial for a correct evaluation. Moreover, some problems due to artifacts, metal devices, bleeding in the prostate gland, inflammatory states, could sometimes alter the interpretation and reduce the accuracy of mpMR. In addition, the group of the retained surgical items (RSI), although with a much lower statistical incidence, can also test the accuracy of this imaging, producing serious implications for the health of the patient, as well as medical-legal consequences. We report the case of a patient in whom mpMR described as a capturing inguinal lymph node, a gauze forgotten after an inguinal hernioplasty performed years before and unexpectedly discovered only at a subsequent robotic radical prostatectomy (RARP).

2. Case presentation

A 74-years-old man, with healthy and asymptomatic status, no signs of infection or acute inflammatory diseases, negative physical examination of the abdomen and inguinal regions, laboratory tests in the normal range, was considered in our department for increased levels of total prostatic specific antigen (PSA). As previous surgical procedures, he was submitted to an open right inguinal hernioplasty in 1980, open left inguinal hernioplasty in 2005 and then again, an open right

hernioplasty in 2019. After an increase in total PSA levels (3.5 ng/ml) during treatment with Dutasteride the patient undergoes mp-MR of the prostate (April 2021). At mpMR, in a prostate gland of 47 cc, the main nodular lesion sized 8 × 10mm - PI-RADS score 4. This lesion was in contact with the capsular profile, with an extension <10 mm, without significant bulging effect and normal seminal vesicles. No suspicious lymph nodes. As collateral finding, the mpMR identified "a round mass, with inhomogeneous content and thickened wall, showing peripheral enhancement, sized 49 × 40mm, compatible with colliquate lymphadenopathy", located at the beginning of the right inguinal ring (Fig. 1). After a targeted prostate biopsy, a histological diagnosis of prostatic adenocarcinoma Gleason score 7 (3 + 4) was obtained, 3/12 positive cores and a maximum of 33.3% of the tissue involved per core.

On July 2021 the patient was submitted to a robotic-assisted radical prostatectomy (RARP). During the first part of the procedure, after having incised the parietal peritoneum, reaching the Retzius pre-vesical space, in correspondence with the right internal inguinal ring, a swelling of about 4 cm which made it difficult to open the right endopelvic fascia was evidenced. It was superficially incised with the initial leakage of serum material and then the presence of a foreign body, in the area where the previous hernioplasty was performed, partially attached to the surrounding tissues was unexpectedly discovered. Proceeding with the dissection, it was identified as a medium size surgical gauze, with modest surrounding granulomatous reaction and no signs of relevant infection (Fig. 2). The gauze was completely removed without bleeding

^{*} Corresponding author.

E-mail address: bruno.bucca@uniroma1.it (B. Bucca).

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Fig. 1. MRI T2-Weighted sequence.

The gauze reported as a round mass, with inhomogeneous content and thickened wall, showing peripheral enhancement, sized 49 × 40mm, compatible in the first hypothesis with colliquate lymphadenopathy.

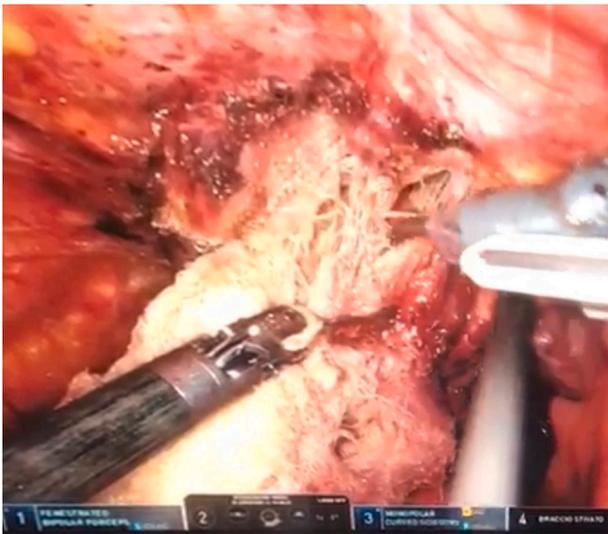


Fig. 2. Intraoperative view of the gauze.

The gauze as it seen during robot assisted radical prostatectomy, in the right inguinal canal, surrounded by adhesences and granulomatosis reaction tissue.

or damage to the muscular planes. RARP was successfully completed without complications, and the patient was discharged on the 4th post-operative day. A normal antibiotic prophylaxis was performed, and inflammatory indexes were all in the normal range as a regular post-operative course. After surgery, the patient was informed on the unexpected intraoperative finding and confirmed that he had not experienced any symptoms or pain in the right inguinal region, neither evidence of infections or inflammatory status.

3. Discussion

Retained surgical items (RSI) are a relatively infrequent, but underestimated phenomenon which is dangerous for patients' health and legal security of the medical personnel.

RSI are divided into soft such as surgical swabs, gauze, and bandages.

Soft objects most often left behind include large swabs (42.01%), small swabs (26.11%), and bandages (22.10%); and hard objects, that include surgical tools (5.21%), needles (2.84%) and other (>1%).¹ According to the recent literature, the most frequent sites for RSI are abdominal cavity (55.26%), pleural cavity (18.42%) and pelvis (10,52%). Less frequent sites are urinary tract (7,89%) and gastrointestinal tract (5.26%).¹

To date only few studies have investigated RSI related risk factors. Recently Moffat-Bruce S. et al.,² reported as most significant risk factors for RSI, situations such as more than one operative procedure on the same site, a longer duration of operation, an estimated intraoperative blood loss >500 mL and unexpected intraoperative findings. Contrary, authors did not find any association with elevated BMI index, emergency setting, multiple operative teams, and the presence of a surgical trainee.³

The most common reaction to an RSI from the body is an initial aseptic fibrous tissue, which progresses from adhesion, to encapsulation, until to granuloma formation, which leads to abscess production, with the highest risk of sepsis. The absence of clinical signs and the mpMR report of "Inguinal lymphadenopathy" in a patient with PC diagnosis, could be interpreted as a N1 clinical stage, leading to different therapeutic indications. Fortunately, we considered the finding of a single lymph node, oversized and in a less common region, more suspicious for misdiagnosis than for a significant lymph node spreading of PC and the patient was submitted to RARP as indication for an intermediate risk, clinically localized tumor.

Imaging has a key role in the identification and characterization of RSI; despite the introduction of safety tools such as radiopaque markers on soft surgical items (since 1980), accurate and systematic surgical count, advanced imaging techniques, the problem has not totally been eliminated. Many cases of different misdiagnosis have been reported in literature; Mamoulakis et al. described the case of a calcified nephrostomy tube fragment mimicking a renal pelvic neoplasia on mpMR, identified only when a diagnostic ureteroscopy was performed after several months of radiologic follow-up.⁴

4. Conclusion

Unfortunately RSI are commonly underreported in contemporary literature for several reasons. First, medical-legal controversies may avoid surgeons from sharing their experiences concerning RSI; second it is expected that RSI represent rare event in clinical practices, making it difficult to collect.

Since retain foreign bodies can remain asymptomatic for a long time, RSI identification by imaging is still a hard challenge.

Declaration of competing interest

The authors have declared that no conflict of interest exists. The authors alone are responsible for the content and writing of the paper. The manuscript has been seen and approved by all authors. This study was not funded. The manuscript is not under consideration for publication elsewhere. All the authors gave a significant contribution to the manuscript.

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