

Pelvic Gossypiboma Diagnosed at the Time of Radical Prostatectomy 30 Years after Inguinal Hernioplasty

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Abstract

Study Background: The term “Gossypiboma” is used to define a mass inside the body consisting of cotton matrix with surrounding foreign body reaction. Gossypibomas may be clinically silent or present in the postoperative period with a broad range of symptoms, mimicking a mass or abscess both clinically and radiologically. Although extremely rare, their precise incidence is unknown and probably underestimated.

Methods: Herein we describe the case of a 71-year-old man with a large pelvic Gossypiboma diagnosed at the time of radical prostatectomy (RP) 30 years after inguinal hernioplasty.

Results: Clinical stage of prostate cancer was cT2N1M0. Preoperative CT scan showed a 3.0 cm × 5.0 cm mass of unknown nature with inhomogeneous uptake of contrast medium close to the right iliac vessels suspected for lymph node metastasis. For this reason, an open approach was chosen for RP and extended lymph node dissection. A solid mass, firmly adherent to the surrounding tissues, was carefully dissected from the iliac vessels and removed en-block. The intraoperative examination revealed a left-behind surgical sponge. No surgical complications were recorded. At definitive histopathological analysis, a Gleason 4+4 pT3b N0 (n=28) prostatic acinar adenocarcinoma was found and a retained surgical sponge with a peripheral fibrous pseudocapsule, resulting from an inflammatory foreign-body reaction, were found. Surgical margins were negative for malignancy.

Conclusion: Although more infrequent with the advent of standardized surgical counting, gossypibomas can still occur in surgical practice, being either asymptomatic occasional findings or, if not promptly diagnosed, life-threatening causes of acute abdomen. In our case, the radiological appearance of the pelvic gossypiboma simulated a malignant lymphadenopathy and changed our surgical strategy from the robotic to the open approach. Overall, our case highlights how prevention represents the key aspect to ensure the maximal safety of surgical patients.

Keywords: Gossypiboma; Hernioplasty; Prostate cancer; Radical prostatectomy; Surgical sponge

Introduction

Gossypiboma is a Latin-derived term from “Gossypium” (cotton) and “boma” (place of concealment) used to define a mass accidentally left inside the body after a surgical operation, consisting of cotton matrix with surrounding foreign body reaction [1]. Such entities are sometimes referred to as “textilomas” or “retained surgical sponge”.

Gossypibomas may be clinically silent or may present in the early postoperative period with a broad range of symptoms, mimicking a mass or abscess both clinically and radiologically [2]. While several cases have been described in the past literature [3], gossypibomas are becoming extremely rare in current clinical practice. Yet, their actual incidence is unknown and probably underestimated, as the reporting rate might be potentially influenced by medico-legal issues [4-7].

Materials and Methods

Herein we describe the case of a 71-year-old man with a large pelvic gossypiboma close to the right iliac vessels diagnosed at the time of radical prostatectomy for a high-risk prostate cancer 30 years after inguinal hernioplasty.

Clinical Case

A 71-year-old man referred to our Department for obstructive lower urinary tract symptoms (LUTS) and history of a vague, chronic discomfort in the right groin and testis since many years. The patient was a married retired office worker, with type 2 diabetes under pharmacological treatment and previous history of inguinal hernioplasty 30 years before. No other significant comorbidities or abdominal surgeries were recorded. The patient referred that while the LUTS were stable during the previous months, the discomfort in the right groin was

progressively growing for one year, yet without any burdensome local symptoms.

Physical examination was unremarkable. A palpable nodule was detected on the right prostatic lobe at digital rectal exploration. Blood test revealed PSA level of 13 ng/dl with a free to total PSA ratio of 11%.

Diagnostic assessment and imaging findings

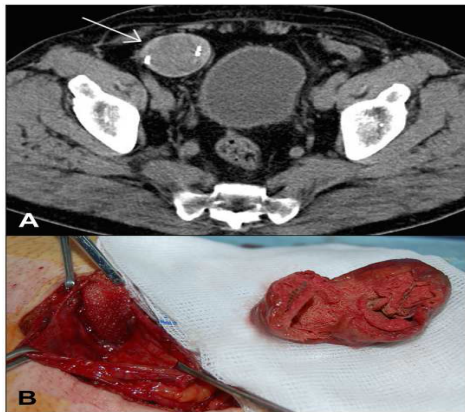
The patient was scheduled for trans-rectal ultrasound-guided prostatic biopsy. Histopathological analysis revealed, according to the recommendations for pathologic evaluation and reporting of carcinoma of the prostate following the WHO 2016 classification [8], a Gleason score 4+4 (grade group 4) prostatic acinar adenocarcinoma involving 6 out of 14 cores, of which 5 on the right side. A whole-body bone scintigraphy and contrast-enhanced CT scan of the thorax, abdomen and pelvis were performed to complete the disease staging. No distant metastases were present. At CT scan, a 3.0 cm × 5.0 cm mass of unknown nature close to the right iliac vessels with an inhomogeneous uptake of contrast medium, suspected for lymph node metastasis, was detected (Figure 1A). Clinical stage was cT2N1M0.

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Figures 1A and 1B: A. Preoperative CT scan showing the pelvic gossypiboma. There was no evidence of pathologic pelvic lymph nodes on the left side of the pelvis, while a solid mass of unknown nature was found close to the right iliac vessels. The central area was inhomogeneous as due to necrotic tissue; in turns, the peripheral, hypodense crown contained several hyperdense spots. The densitometric aspect of the prostate was highly irregular. B. Intraoperative image of the pelvic gossypiboma after surgical excision. The parailiac mass was carefully isolated and removed intact. The intraoperative examination revealed a retained surgical sponge with a peripheral fibrous pseudocapsule resulting from an inflammatory foreign-body reaction.

Management and outcomes

After 20 days from diagnosis and multidisciplinary tumor board discussion, the patient was scheduled for open radical prostatectomy (RP) and bilateral extended pelvic lymph node dissection (LND) with curative intent. The large size and irregular shape of the suspected pelvic lymphadenopathy, as well as the absence of a clear cleavage plane from the adjacent iliac vessels, represented the key factors driving the surgical strategy toward an open rather than robotic approach.

The patient was placed in supine Trendelenburg position. Technique of antegrade RP was previously described [9]. In particular, after intrapelvic fascia exposure and incision, the dorsal vascular complex was ligated with the use of two single 0 resorbable transfixing sutures. No surgical devices were used to ligate the dorsal vein complex. In this case, we adopted an extra fascial dissection with the removal of both neuromuscular bundles. Any perforated vessel was clipped and sectioned with cold scissors. After prostate removal and urethral anastomosis, appropriate drainage was positioned.

During the right lymph node dissection, a solid mass, firmly adherent to the surrounding tissues, was found. After careful dissection from the iliac vessels and surrounding structures, the mass was removed en-block and its intraoperative analysis revealed a left-behind surgical sponge (Figure 1B). No pelvic lymphadenopathies suspected for malignancy were found during bilateral LND.

A 18 Blake drainage was placed at the level of the right iliac fossa.

Operative time was 165 min, estimated blood loss 150 cc. No intraoperative complications were recorded. The drainage was removed on post-operative day (POD) 4, the catheter on POD 14 and the patient was discharged in good clinical on POD 7.

Definitive histopathological analysis revealed a Gleason 4+4, grade group 4 prostatic acinar adenocarcinoma involving the periprostatic tissues and seminal vesicles [8]. Surgical margins, as well as all 28 lymph nodes removed, were negative for malignancy (stage pT3bN0MX). Final examination of the pelvic mass confirmed a retained surgical sponge

with a peripheral fibrous pseudocapsule resulting from an inflammatory foreign-body reaction.

Discussion

Gossypibomas may be clinically silent or present with a broad range of symptoms. In the early postoperative period, they may manifest with clinical sign and symptoms due to exudative reaction, abscess and skin fistula formation. They may also present months or years after surgery in the form of foreign body granuloma or mass formation [10-12].

In our case the retained surgical sponge has been clinically silent for almost thirty years simulating a lymph node mass at the time of surgery for prostate cancer and leading to a change of strategy from the robotic to the open approach to manage the LND with the maximal oncologic efficacy.

Although more infrequent with the advent of standardized surgical counting [13], gossypibomas can still occur in surgical practice being either asymptomatic occasional findings or, if not promptly diagnosed, life threatening causes of intestinal obstruction and acute abdomen.

The radiological appearance of retained surgical sponges may simulate other findings as abscesses or masses of unknown nature, leading to potential changes in surgical strategy and type of management. To this regard, the problem of retained surgical items affects both open and minimally invasive surgery [7,14].

Non-absorbable gossypibomas containing radio-opaque marker are easily identified in radiograph or computed tomography (CT) scans in the post-operative periods. However, retained surgical gauzes with no radiopaque markers might be difficult to detect on imaging and diagnosis may be a challenge. On ultrasound imaging, gossypibomas usually appear as a hyper-echoic lesion with a hypoechoic rim casting posterior acoustic shadow. At CT scan images, a capsulated mass with spongiform pattern with or without gas bubbles is usually detected in case of retained surgical sponges.

Many factors might be associated with the occurrence of gossypibomas, as the setting of emergency surgery, unexpected changes of the surgical procedure, inadequate staff experience, long-lasting operations and, most of all, failure to respect the principles of surgical counting and other non-technical issues related to the organization and team-working of the operative room [15,16].

Conclusion

This case highlights how prevention represents the key aspect to ensure the maximal safety of surgical patients. Standardized surgical counting, training of non-technical skills, experience and team-working represent integral part of surgery and must be considered as key values to avoid the occurrence of gossypibomas in current surgical practice.

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