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Tumefactive intramural gossypiboma of the urinary bladder mimicking an invasive adnexal malignancy

Shivi Jain, Ashish Verma, Madhu Jain[1], Sameer Trivedi[2], Ram C Shukla, Arvind Srivastava

Departments of Radiodiagnosis and Imaging, [1]Obstetrics and Gynaecology and [2]Urology, Institute of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India

Correspondence: Dr. Shivi Jain, G-11, Lal Bahadur Shastri Nagar Colony, Karaundi, Varanasi - 221 005, Uttar Pradesh, India.
E-mail: shivijain1103@gmail.com

Abstract

A surgical swab retained in the body after surgery is known as 'Gossypiboma'. The purpose of this report is to highlight an intramural vesical gossypiboma mimicking an invasive adnexal malignancy. A 28-year-old multiparous, with open-tubal ligation three years ago, presented with painless hematuria and a nontender mass on vaginal examination. USG suggested 'pelvic endometriosis' infiltrating into the bladder and cystoscopy showed no intraluminal extension of the mass. Contrast-enhanced computed tomography (CECT) and magnetic resonance imaging (MRI) misdiagnosed it as invasive malignancy of the fallopian tube. Exploratory laparotomy found it to be an intramural vesical gossypiboma. A pelvic gossypiboma infiltrating into the wall of the urinary bladder may easily be misinterpreted as an invasive pelvic malignancy on imaging and may make one consider unwarranted radical surgery.

Key words: Intramural vesical gossypiboma; invasive adnexal malignancy; tubal ligation

Introduction

'Gossypiboma' is the term used to describe a retained surgical swab in the body after an operation. Retention of a foreign body in the abdomen may become symptomatic at a later date and require another surgery. The abdominal cavity is the most common site reported, but almost any cavity or surgical procedure may be involved. Other less commonly affected sites described in literature are the nose, tracheobronchial tree, breast, pancreas, pararenal space, vagina, femur, and spine.[1-9]

To the best of our knowledge, a gossypiboma retained in the wall of the urinary bladder following tubal ligation has not been reported. We present an unusual case of an intramural vesical gossypiboma, misdiagnosed as malignancy of the right fallopian tube invading into the urinary bladder on imaging.

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Case Report

A 28-year-old multiparous ($P_4 + {}_0L_4$) female, presented to the Gynecology Outpatient Services, with a chief complaint of painless hematuria for two months. She had open tubal ligation done three years back. An abdominal examination showed no significant finding. On vaginal examination, a nontender mass was felt in the right fornix. Routine investigations showed low hemoglobin (8 gm %) and few red blood cells (RBCs) in the urine.

Transabdominal USG (iU22; Philips Medical System, Andover, MA, USA) showed an ill-defined, predominantly hypoechoic lesion involving the right adnexa, infiltrating the right lateral wall of the urinary bladder, with a normal ipsilateral ureter. Extension into the lumen of the bladder could not be ruled out. The right ovary was seen separate

from the lesion. On account of the young age of the patient and a background history of tubal ligation, the possibility of pelvic endometriosis (predominantly tubal, with infiltration into the bladder) was considered. Cystoscopy revealed solid-looking, round-shaped protrusions from the dome and anterior wall of the urinary bladder, without any mucosal breach or intraluminal extension. However, mucosal congestion was appreciated overlying the protrusions. Contrast-enhanced computed tomography (GE Light Speed VCT 64 slice CT, New Jersey, USA) of the abdomen revealed the mass to be heterogeneous, mildly enhancing, and invading into the dome and right anterolateral wall of the urinary bladder [Figure 1A and B], with surrounding fat stranding. There was no significant lymphadenopathy or ascites. An MRI (Siemens Magnetom Avanto 1.5 Tesla, Erlangen, Germany) was done, as a further workup, which revealed no intralesional T1 hyperintensities [Figure 2A], but few cystic foci [Figure 2B], lowering the possibility of endometriosis. The right fallopian tube was found to be involved in the mass. Invasion of the urinary bladder was noticeable as on CECT; with no obvious intraluminal extension, but with edematous adjacent mucosa [Figure 2C and D]. A mild amount of fluid was also seen in the vicinity, posterior to the right ovary [Figure 2B]. Overall the features on CECT and MRI made us think of a possibility of right tubal malignancy invading into the urinary bladder (intramural extension).

Exploratory laparotomy unveiled the presence of an approximately 6 × 6 cm mass, infiltrating the dome and right anterolateral wall of the urinary bladder [Figure 3A]. The right fallopian tube was found to be adherent only to the mass and was separated. With an operative diagnosis of primary bladder mass, it was excised with partial cystectomy.

However, on sectioning the excised mass, multiple cotton threads were seen [Figure 3B], thus altering the diagnosis to that of a gossypiboma. Histopathological examination confirmed it to be a foreign body granuloma.

Discussion

Gossypiboma can present as a pseudotumoral (resembling a tumor mass), occlusive (invading and obstructing adjacent vessel) or septic syndrome (acting as a nidus for sepsis). USG in our case made us think of possible differentials of adnexal masses, such as, endometriosis, tubal mass- inflammatory/neoplastic, including chronic tubal ectopic and subserosal uterine fibroid, with degenerative changes. However, considering the locally aggressive features of the adnexal mass, with a normal ipsilateral ovary, the young age of the patient, and her past tubal surgery, a provisional diagnosis of endometriosis was kept as the first possibility. Invasive tubal malignancy

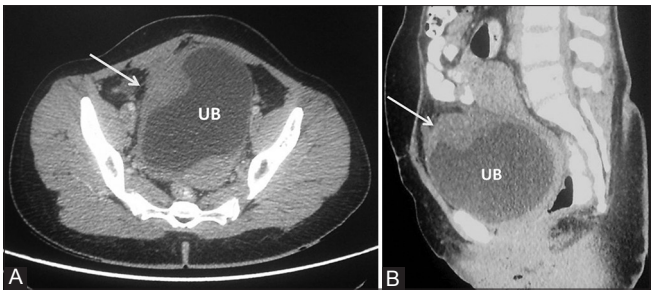

Figure 1 (A and B): Contrast-enhanced CT scan reconstructions in axial (A) and sagittal (B) planes, showing ill-defined, heterogeneous, mildly enhancing mass in the right adnexa, invading into the dome and right anterolateral wall of the urinary bladder (arrows), with surrounding fat stranding. UB = Urinary bladder

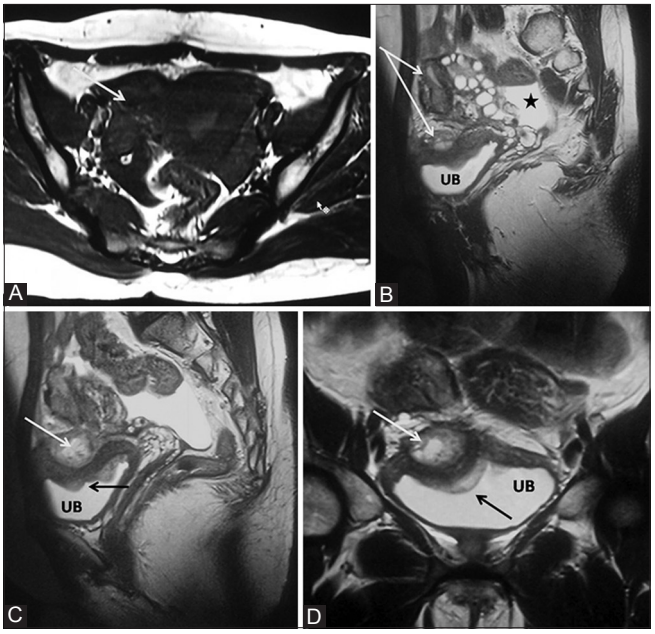

Figure 2 (A-D): Axial T1W (A) and sagittal T2W (B) images showing intralesional cystic foci without any hemorrhage (arrows). Mild fluid is seen (asterisk) adjacent to the polycystic right ovary. Sagittal (C) and coronal (D) T2W images showing invasion of the mass into the wall of the urinary bladder (white arrow) producing multifocal bulges facing the lumen, without any intraluminal extension. The adjacent mucosa appears edematous (black arrow). UB = Urinary bladder

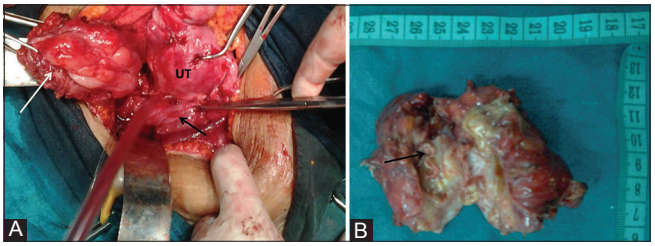

Figure 3 (A and B): Intraoperatively - (A) the right fallopian tube was separated from the mass (white arrow) followed by partial cystectomy (black arrow indicating remnant urinary bladder), to enable mass excision. UT = Uterus. Gross dissection - (B) showing multiple cotton threads (arrow) in the excised mass

was finally suggested by cross-sectional imaging, due to invasion of the bladder wall. A primary bladder mass

extending extramurally into the adnexal region without intraluminal extension was also a possibility.

Thus, the diagnosis of gossypiboma, as in our case, may be difficult, as it may mimic a benign or malignant soft-tissue tumor in the abdomen and pelvis.[10] It may present as an intra-abdominal mass and lead to erroneous biopsy attempts and unnecessary manipulations. It demonstrates various radiological manifestations, and can even change in its appearance depending on the location and the type of foreign body reaction. Our case was also not an exception, as what we thought of as a malignant lesion at one stage after imaging, finally turned out to be a gossypiboma.

In this case, the patient had presented with hematuria, three years after open tubal ligation, and the diagnosis of a foreign body remained in the dark until laparotomy was conducted. Imaging showed a locally invasive mass involving the right adnexa and adjacent part of the urinary bladder, which was actually caused by a foreign body–type granulomatous reaction to the surgical material. The foreign body might have incited inflammatory reaction in the adjacent bladder wall that perhaps progressed to necrosis and led to further penetration into the wall. Eventually, the defect might have been sealed off by fibrosis from all around keeping the gauze asymptomatic in the bladder wall. It caused hematuria later, perhaps because of congestion of the overlying mucosa, as no intraluminal extension of the mass was evident.

Generally, a gossypiboma is identifiable on the basis of an echogenic curvilinear structure having a dense acoustic shadow posteriorly.[11] Similarly, the typical radiological finding on computed tomography is a predominantly high attenuation central mass with a spongiform pattern of air bubbles and a hyperdense, well-enhancing rim.[12] However, a well-defined mass, with low signal intensity at the T1- and T2-weighted imaging at its periphery and whorled stripes centrally is its characteristic feature on an MRI.[10] Post-contrast, the T1W images show enhancing walls with a serrated appearance of the inner surface. However, none of these classical imaging features could be appreciated in our case as it was only a small piece of gauze and not a large sponge/mop. Moreover, the gauze was completely incorporated into the vesical wall and was not present in the peritoneal cavity. This case throws light on atypical presentation of gossypiboma, of which one should be aware, to prevent mislabeling a curable condition as incurable. It is essential for clinicians also to be aware of this entity and keep it as one of the differential diagnosis of a locally invasive adnexal mass, especially in young females, with a prior history of surgical intervention. A pelvic gossypiboma infiltrating into the wall of urinary bladder may easily be misinterpreted as an invasive pelvic malignancy and advanced investigations and unwarranted radical surgery may be contemplated.

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