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Case Report
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An Unusual Malignant Appearance of Gossypiboma : Case Report

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Abstract

Objectives: The aim of this case presentation was to show a case of an unusual malignant appearance of gossypiboma on Magnetic Resonance Imaging (MRI) of the patient whom had a robotic laparoscopic surgery.

Methods: A 38 year old woman with no known co-existing health problems had left open nephrolithotomy 10 years ago in another country. During her asymptomatic period an ultrasound for the control of existing nephrolithiasis history defined an incidentally heterogeneous mass including calcification and malign features of vascularization. A 4.7 cm × 4.5 cm × 5.3cm peripherally thick and irregular rim contrast uptake with a central weak contrast uptake sarcomatous mass was showed on post-Intravenous Contrast Material injected (IVCM) images of abdominal MRI. The solid mass was consisted with a peripherally fibro-vascular, a centrally necrotic-hypovascular areas respectively. A robotic partial nephrectomy was performed and during the operation the mass was obviously a gossypiboma which had malign patterns of neovascularization and contrast enhancement. The renal parenchyma was spared, and the gossypiboma was resected successfully. The specimen was then sent to the pathology department. The pathology report described a yellow-brown necrotic fatty tissue with histiocytic reaction including a foreign body composed of textile-cotton fragments inside.

Results and Conclusion: To date, the exact prevalence of gossypiboma is unknown due to malpractice claims and medicolegal problems. Therefore, there is an extremely limited literature concerning the follow-up periods of these patients. Although malignancy is a differential diagnosis for gossypibomas, our case report is unique due to the long asymptomatic period observed in the patient.

Keywords: Gossypiboma; Robotic surgery; Laparoscopy; Nephrectomy; Renal cancer

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Introduction

Gossypiboma is a textile-cotton mass left behind in a part of the body during a previous operation. The first case in literature was reported by Wilson in 1884 [1]. The prevalence of gossypiboma is unknown due to malpractice claims and medicolegal problems. However, it is estimated that retention of surgical sponges or swabs during the operation is seen in 1/100-5.000 of all operations. Gossypiboma is most frequently diagnosed in the abdominal cavity and has been reported in 1/1.000-1.500 of abdominal operations [2]. A systematic review consisting of 254 cases showed that gossypibomas were seen mostly in the abdomen (56%) followed by the pelvis (18%) and finally in the thoracic cavity (11%) [3]. The gossypibomas can be found incidentally many years after surgery without any symptoms. However, classic symptoms of gossypibomas include pain, fever, abdominal tenderness due to adhesions, abscess formation and subsequent infections a couple of weeks after the operation [4]. One of the longest periods of diagnosis was 43 years after the initial surgery which occurred in the thoracic cavity [5].

A Gossypiboma can cause a foreign body reaction, infection, abscess or fistula formation. A surgical sponge or textile-cotton material with a radiopaque marker can be easily detectable on a plain radiography in the operating room after the closure of the fascia. Any type of surgical textile-cotton material left behind in any part of the body cavities which was not noticed at the end of

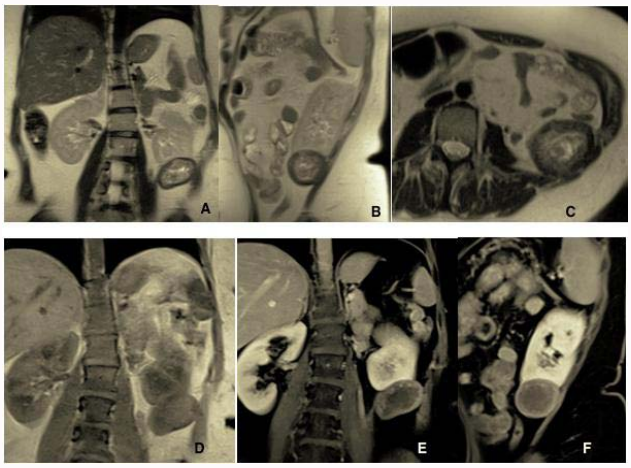

Figure 1: MRI images of T2A coronal (A), T2A sagittal (B), T2A axial (C), T1A coronal (D), after IVCM T1A coronal (E) and T1A sagittal (F).

Figure 2: Pathology Specimen of Gossypiboma.

an operation might lead to a granulomatous reaction and capsula formation while symptoms remain undetected. During this period gossypibomas can be misdiagnosed as an abscess or a tumor. Manzella et al. [2] briefly defined the common and typical imaging features of gossypibomas under plain radiography, Ultrasonography (USG), Computed Tomography (CT) and Magnetic Resonance Imaging (MRI). In our case, the gossypiboma was presented as a tumoral mass with malignant features on a MRI scan.

Case Presentation

A 38 year old woman with no known co-existing health problems had left open nephrolithotomy 10 years ago in another country. During her urinary tract ultrasound for the control of her previous nephrolithiasis, a heterogeneous mass including calcification and malign features of vascularization was detected incidentally. She was asymptomatic during this period. An abdominal MRI revealed a 4.7 cm × 4.5 cm × 5.3 cm sarcomatous mass which was fixed to the muscles of the posterolateral abdominal wall. Inside the fat tissue, a well defined smooth contour mass was compressing the lower pole of left the kidney. In the center of the mass a mix intensity component was seen while in the peripheral area hypointense thickening was seen on the T2A sequences. On the T1A sequences the solid mass showed isointense signal intensity with peripheral mild hypointensity. Post-Intravenous Contrast Material injection (IVCM) demonstrated a peripherally thick and irregular rim contrast uptake with a central weak contrast uptake. As a summary a solid mass with peripheral fibro-vascular pattern while the central part of the solid mass showed necrotic- hypovascular pattern (Figure 1). On January 2018, a robotic partial nephrectomy was performed and during the operation the mass was obviously a gossypiboma which had malign patterns of neovascularization and contrast enhancement. The renal parenchyma was spared, and the gossypiboma was resected successfully. The specimen was then sent to the pathology department. The pathology report described a 6.5 cm × 4.5 cm × 3.5 cm yellow-brown necrotic fatty tissues with histiocytic reaction including a 4.5 cm × 3 cm × 1.5 cm foreign body composed of textile-cotton fragments inside (Figure 2).

Discussion

Manzella et al. [2] described the typical radiological appearance of a gossypiboma with real case images consisting of USG, CT and MRI. The ultrasound feature is generally a well-described mass containing a wavy internal echo. The ultrasound images can be solid or cystic with air inside and acoustic shadowing due to calcifications. The computed tomography is one of the standard imaging modalities for both diagnosis of masses and it's complications. Usually the appearance of a gossypiboma using CT is described as a low-density heterogeneous mass with an external high-density wall. An external high density wall can be highlighted on contrast-enhanced imaging and contain air as a spongiform pattern. As a summary, the typical appearance of a retained sponge on a CT scan is a soft-tissue density with a whorled texture or gas bubbles. On an MRI, the signal intensity may differ due to the histological composition of the mass and a gossypiboma usually presents itself as a soft-tissue density mass with a thick well-defined capsule which is hypointense on T1-weighted and hyperintense on T2-weighted images. A gossypiboma can be confused with an abscess, hydatic cysts, tumor, radiation necrosis and posttraumatic osteosarcoma [2]. A systematic review reported that gossypibomas mostly seen in the abdomen (56%) with an average time of diagnosis of 6.9 years [3]. In 42% of the cases, patients had pain/irritation while 6% of them were asymptomatic [3]. Our case was asymptomatic and a gossypiboma occurred due to a previous abdominal operation which was completed 10 years ago. According to the MRI report, a sarcomatous mass which was located next to the lower pole of the left kidney and pushing the left kidney upwards was discovered. The mass also had both internal and peripheral neovascularization patterns and heterogeneous contrast uptake after intravenous contrast injection. All the findings on the MRI report and images suggested a malignancy in the lower pole of the left kidney. Although malignancy is a differential diagnosis for gossypibomas, our case report is unique due to the long asymptomatic period observed in the patient.

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