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Gossypiboma: Ultrasound Diagnosis and Laparoscopic Management

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Abstract

"Textiloma" or "gossypiboma" are terms used to express a rare iatrogenic mass due to cotton sponge that has been forgotten after abdominal surgeries. Gossypiboma is composed of a cotton material that approximately remains in 1/3,000 surgical processes, such as emergency surgeries, unexpected surgical procedures, poor organization, rapid sponge count, failure in sponge counting, prolonged operations, unstable patients and operations by assistants. In the last years, the main method for removal of retained foreign objects has been open laparotomy or laparoscopy.

We present a case of a 66-year-old female diagnosed with an unknown abdominal mass of 10x6 cm seen on ultrasound and a CT (Computed Tomography), that after an explorative laparoscopy was diagnosed as gossypiboma.

Keywords: Gossypiboma; Laparoscopy

Introduction

A reactional mass around the cotton item, called gossypiboma or textiloma, most often has several signs of malignancy on Magnetic Resonance Imaging (MRI) [1]. A soft tissue tumour is often suspected, but the treatment is not the same. Gossypiboma occurs when a compressor woven drape is unintentionally left in the patient during a surgical procedure. This is a rare complication: the incidence is between 1/100 and 1/3000 for all procedures combined [2]. They are most commonly diagnosed in the intra-abdominal cavity. Other documented locations include: the chest, extremities, CNS, and the breast [3]. Retained surgical towel may present as chronic abdominal pain, nausea and vomiting after feeding because of gastric outlet obstruction, when it migrates into the gastro-intestinal lumen, or be completely asymptomatic [4-6]. The typical diagnosis is that of soft tissue tumour [7] or infectious fluid accumulation [8]. Over the years, open surgery has been the mainstay method for retained surgical gauze removal [9]. Up today, few cases have been reported in relation with removal of retained surgical gauze by laparoscopy.

Case Report

A 66-year-old woman discovered an unknown intra-abdomen mass during breast cancer-follow up. The patient had multiple diseases, essential hypertension, Obstructive Sleep Apnea (OSA), and a history of two distinct breast cancer diagnosis, the former in 1989 treated by total mastectomy plus lymphadenectomy (right), and the latter in 2014 treated by quadrantectomy plus sentinel lymph node (left) and anastrozole. She performed a total hysterectomy with bilateral oophorectomy in 2012 for endometrial hyperplasia. The patient had a BMI > 35 (39.14= Obesity II). In 2016, her gynecologist discovered a pelvic mass during a routine follow up and prescribed a RMI (Magnetic resonance imaging) exam, until then the patient did not have any kind of syptoms. The RMI showed a pelvic mass situated over the bladder of 10x6 cm, with an owe edges and made of liquid and solid matter without any infiltration of the bowel, and suggested a surgery valuation. Markers were CA 125 3.00, Ca 15.3 12.7. An ultrasonography exam was performed and showed a midle-pelvic mass of 73x81x82 mm, without vascularization, with possible diagnosis of external body retention. An abdomen XR(X-rays) reported a sinuous image with double radiopaque edges in right iliac fossa. An explorative

laparoscopy was performed, where showed a right pelvic cystic mass. Injury of the cystic with leakage of purulent material was accidentally done and was visualized a laparotomy gauze with X-ray detectable thread. The gauze and its cystic walls were removed by endobag.

Discussion

Due to the legal issues associated with it, very few literature studies are available online, most of them being case reports [3]. The condition is more commonly seen in the developing nations with a higher incidence in women as compared to men3. The first case of a gossypiboma was reported by Wilson in 1884 [10]. The most common site reported is the abdominal cavity; however, virtually any cavity or surgical procedure may be involved; it can also occur in the breast, thorax, extremities, and the nervous system10. These retained sponges are most commonly seen in obese patients, during emergency operations involving hemorrhage, and after laparoscopic procedures [10,11]. Gossypibomas produce nonspecific symptoms and may appear years after surgery [10-12]. Gossypiboma can cause a variety of clinical presentations-from being incidentally diagnosed to being fatal. Clinical presentation may be acute or subacute. Patients present with nonspecific abdominal pain, palpable mass, nausea, vomiting, abdominal distension, and pain [13], or can be misdiagnosed as a tumor [14].

Eight risk factors for gossypibomas are commonly acknowledged, namely- emergency surgeries, unexpected change in surgery, involvement of more than one surgical team, change in the nursing or operation theatre staff during an operation, Body Mass Index (BMI), volume of blood loss, female sex and surgical counts[15]. There are two types of foreign body reactions associated with gossypibomas. The most common being a fibrous aseptic inflammatory reaction and adhesion that encapsulates the gossypiboma in the omentum and surrounding organs, the other is an exudative inflammatory reaction leading to an abscess or fistula formation- Abscess can lead to an external opening or force it through an opening into an adjacent hollow organ [15-17]. Radiography is the initial modality used to detect gossypiboma. The diagnosis will be straightforward if the sponge contains a radio-opaque marker, and appears as soft tissue opacity/density mass with curved or banded radio-opaque/dense lines on radiography or CT. On ultrasound gossypiboma may be classified as cystic or solid types, with the former presenting as a cystic lesion with zig zag hyperechoic bundle and the latter as a complex mass having mixed echotexture areas [3,10].

Only few cases are reported of laparoscopic removing of a gossypiboma. The first case was performed by in 2013, where a 20-cm x 20 cm surgical sponge was removed while the patient was in anesthesia conditions in the operation room because of probable need for urgent surgery [18]. Retained Surgical Foreign Bodies (RSFB) can lead to significant medical and legal problems between the patient and the doctor and have an estimated incidence of approximately 0.3 to 1.0 per 1000 cases. RSFB can result in the surgeon facing charges of medical negligence, thereby increasing the hospital costs for unnecessary legal tangles and compensation. Also, it affects the reputation of the surgeon and contributes to unnecessary morbidity to the patient, which is potentially avoidable. The best way to avoid RSFB is to prevent its occurrence. The different ways to avoid such events are to accurately count all the pieces of surgical gauze and surgical instruments used during an operation, repeat the count in case of any doubt to a member of the operating team, inspect the operative field thoroughly before closure, use radiopaque markers, and X-ray the operative region before and after fascial closure while the patient is still on the operating room table.

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