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Multi Drug Resistant *Escherichia Coli* Forming Intra-abdominal Abscess in a Case of Gossypiboma: Case Report and Review of Literature.

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ABSTRACT

Gossypiboma is a mass-like lesion due to retained cotton swab in abdominal cavity following any operation or exploratory procedure. It is not very uncommon, occurring in about 1 in 1500 operations worldwide. It can either become a fibrotic nodular mass or develop into an abscess. Here we describe abscess formed following gossypiboma development in a young female following Caesarian section which was done in a private hospital.

Keywords: Gossypiboma, Multi drug resistant, *Escherichia coli*.

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INTRODUCTION

Gossypiboma, an infrequent complication of surgical procedures, is a mass lesion due to retained surgical sponge or cotton, surrounded by foreign body reaction [1]. The word is derived from Latin "Gossypium" (cotton) and the Swahili (African) term "Boma" meaning "place of concealment". It is rare in clinical practice, having clinical importance as well as medico-legal consequences [2]. It presents as exudative inflammatory reaction with formation of abscess or aseptic fibrotic reaction with formation of a mass, following an operation with variable time of onset following the procedure [2]. It can lead to considerable morbidity and at times even mortality, and the exudative type is detected and surgically removed early due to earlier development of symptoms [3]. It occurs with an estimated frequency of 1 in 1000-1500 intra-abdominal operations [3]. Bacteria like *Corynebacterium* spp. have been isolated from exudative type of lesions, especially from Gynecological procedures [4]. We here describe a case of exudative Gossypiboma complicated by development of abscess caused by multi drug resistant *Escherichia coli*.

SD, a 22 year old female patient, resident of Airport colony, Patna, presented in the General Surgery OPD of the institute on 25/07/2014 with the chief complaints of moderate to severe pain in lower abdomen for last 6 months along with on-off fever since 4 months. She had also developed heaviness in lower abdomen for the last 3 months. For the last 3 days, she experienced abdominal distension and passage of no flatus or feces. She gave a history of being operated 6 months earlier for delivery by Caesarian section (LSCS) of her second child in a private hospital in West Bengal. On physical examination, she had pallor, fever with palpable tender swelling in right lower abdomen. CT scan done previously showed diffuse lump in right lower abdomen with ill-defined boundary. Hematological investigations showed a Total Leucocyte count of 11500 /microlit., Hemoglobin of 9 microgram/dl, Platelet count of 2.62 lakhs/ microlit. and ESR of 56. Exploratory laparotomy was performed after routine lab investigations, on which retained cotton plug, along with pus was seen. There was also mild adhesion to small intestine and omentum. The mass was surgically removed, adhesions were removed and abdomen was closed in layers after peritoneal toileting. Drain was placed in Hepatorenal pouch and pelvic area. Fever persisted even after operation. The pus was drained, collected in sterile universal container and sent to Microbiology lab for culture and sensitivity. Gram stain of the pus sample showed copious leucocytes and plenty of Gram negative bacilli with parallel sides and round ends. Overnight culture on 5% sheep Blood agar and MacConkey agar at 37° C grew a pure, heavy growth of non-hemolytic, Lactose fermenting, low convex colonies. On Gram stain, the colonies showed Gram negative bacilli of the same type as found from lesion. The isolate was Catalase positive (with 3% H₂O₂) and Oxidase negative. It was motile using semi-solid agar stab. Biochemical tests revealed the following: Indole positive, Citrate non-utilised, Urease negative, acid/acid with gas but no H₂S production in TSI slant. Based on these phenotypic traits, the isolate was identified as *Escherichia coli*. Antibiotic susceptibility testing was carried out by Kirby-Bauer disc diffusion method following CLSI protocol [5]. It was resistant to Levofloxacin, Amikacin (30 µg), Cotrimoxazole, Azithromycin, Cefoperazone -Sulbactam and Piperacillin-Tazobactam (100/10 µg). It was susceptible only to Imipenem and Colistin. Thus the isolate turned out to be Multi-drug resistant (MDR) since it was refractory to 3 or more different classes of antibiotic agents, but negative for Metallo beta lactamase [6]. On follow-up, it was learnt that the patient improved clinically on administration of Imipenem injection and fever subsided.

DISCUSSION

Forgotten or missed foreign bodies, like cotton sponges, gauze or instruments following any surgical procedure are considered a surgical misadventure and can have serious medico-legal implications [7]. They may remain asymptomatic for a long time since cotton does not induce any particular chemical reaction [7]. However, they can lead to severe sequelae like sepsis, intestinal obstruction, formation of fistulae among other complications with an estimated mortality of 10-15% [8]. Exudative gossypiboma can develop into abscess that can either rupture into a hollow viscus or release its contents via formation of fistula [9]. This is the usual course of events in the early post-operative period [10]. As far as we know, this is the first report of an exudative Gossypiboma infected with non-Metallo beta-lactamase producing Multi-Drug resistant *Escherichia coli* in this region. This case highlights the importance of observation of strict vigilance during operative procedures and proper counting of surgical instruments and sponges preoperatively and post operatively and also emphasizes that full course of culture and susceptibility result should precede antibiotic treatment of such conditions. Since there was no intestinal perforation, the *E. coli* probably came from water contaminating inadequately sterilized gauze or instruments, highlighting the importance of proper sterilisation of surgical instruments.



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