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CASE REPORT

SALMONELLA ENTERICA SEROTYPE TYPHI INFECTION IN AN OVARIAN DERMOID CYST: AN ATYPICAL PRESENTATION

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ABSTRACT

Suppurative infection of ovarian dermoid cyst due to *Salmonella Enterica* serotype Typhi is an extremely rare occurrence. In view of rarity, we present a case of 30 year old patient with a left ovarian dermoid where *Salmonella* Typhi was isolated from aspirated material. In our patient, ovary may have been seeded by both hematogenous route and direct spread from intestine. She was later on operated for bilateral salpingo –oophorectomy and treated with Ceftriaxone. Patient was discharged in good condition.

INTRODUCTION

Salmonella Typhi is a gastrointestinal pathogen which causes enteric fever. The disease is characterized by prolonged fever, involvement of reticuloendothelial system and bacteremia. Occasionally, dissemination of bacilli throughout the body results into the formation of localized abscess especially in the organs with pre-existing abnormality.[1] Abscess involving breast [2], bones [3] , pancreas[4], liver [5], have been reported earlier. However, infection occurring in a dermoid cyst of ovary is rare.

Here, we present a case of suppurative infection in ovarian dermoid cyst due to *Salmonella* Typhi. On extensive search of literature, we found only 3 more cases [6-8] where an ovarian dermoid was infected with *Salmonella* Typhi. This prompted us to report such a rare case.

Case report

A 30 year old female, gravida 4, para 4 was admitted in gynecology ward of our hospital with chief complaints of pain in lower abdomen since last 1 month. On abdominal examination, the liver was palpable but not tender. A large, rounded, smooth pelvic mass of cystic consistency was felt in the suprapubic region. On vaginal examination, the mass filled the posterior fornix. There was no previous history of typhoid fever but she gave history of febrile episodes twice in last one year for which she took treatment from the local physician. She denied history of contact with a case of enteric fever. Systemic examination was unremarkable. Patient was given Inj. piperacillin-tazobactam, gentamicin and metronidazole

The laboratory investigation revealed hemoglobin 12.3 g/dl and total leucocyte count 7,700/mm^3 with 59% neutrophils. Ultrasound and computed tomography imaging revealed a cystic mass of size 12.7 X10.4X10.5cm suggestive of dermoid in the left ovary. Tumor marker, (CA 125) level was significantly elevated (81.13IU/ml) [Normal range 35 IU /ml]. Patient was operated and bilateral salpingo –oophorectomy with total hysterectomy was performed. The aspirate from left ovarian dermoid cyst was sent for bacterial culture and sensitivity.

Gram negative bacilli were seen on gram staining. Sample was inoculated onto blood agar and MacConkey agar and incubated at 37^0C for 24 hrs. Pure growth of low convex, smooth, non-haemolytic colonies on blood agar and corresponding non lactose fermenting colonies with irregular margins were observed on MacConkey agar. The colonies were identified as those of Group D *Salmonella* species based on standard biochemical tests and agglutination with Salmonella 09 antiserum (Statens Serum Institut, Denmark). The isolate was

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identified as *Salmonella Enterica* subspecies *Enterica* serotype Typhi after agglutination with anti- d serum (Statens Serum Institut, Denmark). Antibiotic susceptibility testing was performed on Mueller Hinton agar by the Kirby Bauer disc diffusion method [9] and the isolate was found to be sensitive to nalidixic acid, ciprofloxacin, ampicillin, ceftriaxone, co-trimoxazole, and chloramphenicol.

Blood, stool and urine cultures were negative for *Salmonella* Typhi but widal test revealed titres of 320 for both *Salmonella* Typhi O and H antigens. Patient was then treated with intravenous ceftriaxone 2 gm twice a day for 15 days. Patient was discharged in good condition 15 days after operation.

DISCUSSION

Local abscess formation may occur as a complication of any *Salmonella* infection. However, ovary is a rare site. Presence of an underlying ovarian abnormality such as dermoid cyst is a known risk factor for development of suppurative infection due to *Salmonella* Typhi. Still, only 3 such cases are reported in the literature till date. Van Eck *et al* [6] and Hingorani V *et al* [7] reported *Salmonella* Typhi infection of ovarian dermoid cyst five decades back. Nuttall ID *et al* [8] have also isolated the same from dermoid cyst of a 23 year old primigravida. It is likely that often infection though present is missed as it is a routine practice to transfer the surgical specimens directly into formalin for histopathological examination without sending the aspirates for culture and sensitivity. Thus, the bacteriological evidence of infection is destroyed.

Our patient was not diagnosed as a case of enteric fever before, but on isolation of *Salmonella* Typhi; past history of an uninvestigated acute febrile illness (? Enteric fever) was elicited. As regard the route of infection, in this case, presence of dermoid cyst could have been a predisposing factor for haematogenous seeding of bacteria. Since close adhesions to the bowel were found during surgery, direct spread of *Salmonella* Typhi from intestine might also have occurred. The organisms could not be isolated from the blood, faeces or urine. Hence, it was felt that the patient might be a non – excretory carrier in whom *Salmonella* Typhi was lying dormant in the ovarian tissue for a long time.

Our report describes unusual microbiological agent of pelvic infection. This suggests that gastrointestinal pathogens should be considered as potential etiologic organisms in patients presenting with signs of PID. This case highlights the fact that while we have several new emerging infections, the older ones have newer presentations. Therefore, microbiological evaluation of such infections is mandatory for effective management of patient.

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