

# TUBO-OVARIAN ABSCESS AS A COMPLICATION OF TYPHOID FEVER

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Typhoid Fever has been notorious over the decades for the variety of complications that may arise from it, and numerous references are to be found in the medical literature devoted partly or exclusively to discussion of these complications. (Keen, 1898; Osler, 1901; Rowland, 1961; Gadeholt & Madsen, 1963).

In spite of the great variety and frequency of complications that have been described, abscess involvement of the ovaries or Fallopian tubes is one of the rarest of complications.

A patient who developed this rare complication is here described and a short review of the literature made. Factors that may have contributed to this complication will also be discussed.

## **Case Report**

A 30 year old unmarried Maltese woman was referred to hospital on 3-9-65 by her doctor for fever of unknown origin. For the previous two months, the patient had been running an irregular fever reaching at times 102°F in the mornings and 105°F in the evenings. She had complained of frequent frontal headaches, and dizziness. She had not experienced epistaxis. She admitted to having an occasional dry cough, but had no expectoration. Her most prominent symptoms apart from the pyrexia had been frequent moderately severe rigors. She had no abdominal pain, but had had an episode of loose stools lasting three days, though she had been generally constipated throughout her illness. She also complained of general weakness, though she did not look toxic or very ill. Her appetite was poor. Another feature was frequency of micturition and moderate nocturia. She also had mild dysuria. She gave a history of dysmen-

orrhoea since her menarche. Her menstrual periods were regular occurring every 28 days and lasting 7 days. She denied any vaginal discharge.

She had no past history of typhoid or brucellosis. She was questioned as to the drugs she had been having. She admitted having had five separate courses of chloramphenicol, each lasting 3 – 5 days. Chloramphenicol had been prescribed in a dose of one tablet (250 mgm.) every four hours. On every occasion the temperature had subsided by the end of the course and she would feel subjectively better. Pyrexia and rigors would however recur after a few days.

Her doctor had carried out slide agglutination tests for typhoid and brucellosis, which had been negative. X-ray chest and urinalysis had been reported as normal.

On examination she appeared to be an excited plump young woman who did not look toxic or very ill. Her tongue was dry and coated with whitish fur. Her throat looked normal. There was no lymphadenopathy. Her B.P. was normal, and she had a regular, good volume pulse of 100/min. Her abdomen moved on respiration. The liver and spleen were not palpable. There was no rigidity but mild tenderness was present in the right upper abdominal quadrant. No masses were present. Her temperature on admission was 102.4°F.

Laboratory investigations gave the following results: Hb. 13 g./100 ml. (88%). White cell count: 6,900 per. c.mm. (Poly.: 45%; eosinophils: 3%; lymphocytes: 40%; monocytes: 12%). Urinalysis: Faint traces of protein; few pus cells; no casts. Ehrlich's diazo reaction was not carried out. Her blood urea was 30 mgm. per cent.

From the Bacteriology Laboratory at St. Luke's Hospital serum agglutination tests against *Salm typhi O* were reported positive at 1 in 20 and against *Salm. typhi H* up to 1/320; negative against *Bruc. melit.* and a blood culture carried out on the day of admission (3-9-65) was reported five days later to have yielded a growth of *Salm. typhi*.

It was decided to start her again on chloramphenicol 500 mgm. every four hours on the first day followed by 500 mgm. every six hours for another fourteen days. Her

temperature rapidly subsided to normal except for an occasional rise and she improved clinically and denied any symptoms.

As three successive faeces cultures for *Salm. typhi* were negative at the end of three weeks and as there was no abnormal features, she was discharged home.

She was readmitted to hospital as an acute emergency on 30-9-65, 2 days after being discharged, because severe central abdominal colicky pain had developed. A typhoid relapse was suspected.

There was no nausea or vomiting. There was no radiation of pain elsewhere. She had passed a normal stool. Her temperature was 101°F. Her menstrual period was due on 3-10-65. On examination her general condition was good. Her pulse rate was 84/min. and her B.P. was 115/70. Her tongue was moist and only slightly furred. Her abdomen moved with respiration. It was not distended. There was doubtful tenderness over the right iliac fossa with some guarding. The patient was however difficult to examine as she would not relax properly. Bowel sounds were present. She was started on Penbritin 500 mgm. every six hours; kept on fluids only by mouth and closely observed. As she seemed to be developing more rebound tenderness the next day, it was decided to carry out a laparotomy the same evening. At operation (Surgeon R.A.), the peritoneal cavity was opened through a right lower paramedian incision. No free fluid was present. The appendix appeared normal. The coils of intestine were also healthy. The uterus and left adnexa were also normal. On the right side a tuboovarian abscess was present together with fibrinous exudate. A swab for culture was taken from the site and a right salpingo-oophorectomy was performed. No drainage was instituted and the abdomen was then closed in layers.

She was put on Penbritin 500 mgm. every six hours for fifteen days. Penbritin was then continued in a dose of 250 mgm. every six for another three weeks. Her post-operative course was essentially uneventful. *Salmonella typhi* was grown from a swab taken from the operation site.

The patient was regularly followed up at intervals for over a year, but no further complications were observed.

## Discussion

A typhoid infected tubo-ovarian abscess is surprisingly one of the rarest of typhoid complications. In a review of 2647 cases of typhoid and paratyphoid fever (Gadeholt and Madsen 1963) no gynaecological complications were found though 2.6% had urinary tract infections, the frequency of urinary tract infections being twice as high in females as in males. About one fifth of the 530 patients with typhoid described by Rowland (1961) developed one or more complications but no mention is made of tubo-ovarian involvement. Again this complication was not found in Pathania's and Sachar's series (1965) of 340 patients.

The first description in medical literature of an ovarian complication is generally held to have been given by Werth in 1893 when he described the suppuration of a typhoid ovarian abscess occurring eight months after typhoid fever. In France, Widal and Ravault described the first French case in 1902.

The most complete work on the subject has been done by Feldstein (1937) who in his thesis for the University of Lyons was able to collect forty-one cases from the world literature — by far the great majority of cases occurring in already diseased ovaries. Thirty-three of the cases collected by Feldstein were definitely due to *Salmonella typhi*, while four abscesses were attributed to Paratyphoid B organisms.

Staemmler (1950) described two cases. In his first case acute left sided abdominal pain occurred four months after typhoid fever in a 53 year old woman and at operation an infected dermoid cyst was found. The second case in a 39 year old woman was due to paratyphoid B. He also analysed twenty-nine cases in the literature and attributed to Kummel the description of the first case in 1890 and not to Werth as generally held.

Poustopchikine (1952) in the Dutch literature described two personal cases, and discussed the vexed question as to whether an infection with typhoid could give rise to abscess formation in healthy ovaries. One of his patients had a diseased ovary, and the other a dermoid cyst.

The patient described by Bertrand *et al.* (1957) is perhaps of particular interest, as

the initial clinical course prior to operation resembles closely that in the patient described in this paper. Their fortyfour-year old patient had suffered from intermittent pyrexia for 2 months and Chloramphenicol had also been given repeatedly with poor effect. An infected ovarian cyst was found and cut open, but the patient's condition rapidly deteriorated post operatively and she died of an "Encephalite typhoïdique". The authors rightly stress the possibility of endotoxin liberated from the cyst. The surgical complications regarding operative technique and the dangers of liberating endotoxin by cutting open such abscesses at operation are therefore obvious as being the major factor leading to their patient's death. A case described by Detlefsen (1954) is especially unusual as the typhoid infected ovarian cyst perforated.

Another aspect of typhoid management which our case illustrates is the relationship of relapse to dosage of Chloramphenicol. The physician has to steer a course between inadequate dosage with a consequently higher danger of relapse and the, worse, though fortunately rare possibility, of haematological toxicity from chloramphenicol itself. A distinction must be made between the relapse rate of the untreated case and that of the Chloramphenicol treated case. Among the 28057 patients with typhoid fever in the European and American literature, Osler found that the relapse rates varied in different series from 3% to 18%. This, of course, refers to the pre-chloramphenicol era, before the dramatic effect of chloramphenicol in the treatment of typhoid fever was first described by Woodward and his colleague in 1948.

According to numerous authors including John & Vinayagam (1952) and El Ramli (1953) treatment with chloramphenicol for an inadequate period of time leads to a much higher relapse rate than in cases not treated with Chloramphenicol. Smadel, Woodward and Bailey (1949) found a definite relation between chloramphenicol treatment and relapse rate. The relapse was over 50% in cases treated for eight days or less. Good and MacKenzie (1950) found a similar relapse rate.

El Ramli (1950) found that, on an aver-

age, 28% of treated cases relapsed, but that relapse was 33% in those patients treated for six to ten days into convalescence and 8% in those treated for 11-15 days. The therapeutic lesson was therefore clear and his further figures in 1953 illustrate this.

In 1953 he found that the relapse rate in patients who had continued with chloramphenicol for twelve days after a normal temperature had been reached was only 4%, while it was 26% in those whose treatment had been stopped on the third day of convalescence. Huckstep (1962) in his excellent review on the subject concludes therefore that in typhoid fever chloramphenicol should be continued for at least 14 days. The 15 days course given to our patient when she was first admitted to hospital should have been adequate for the ordinary case of typhoid. The implications that may be derived from the case is that if previously inadequate courses of chloramphenicol have been given, then there is the increased risk of a typhoid complication. The possibility of local abscess formation somewhere in the body should be held in mind. Such cases also suggest that consecutive treatment with Ampicillin should be considered in these circumstances.

It is strongly believed that the complication of tubo-ovarian abscess in the present case would not have arisen had a fully adequate dose of Chloramphenicol been given at home from the start, and Bertrand's similar experience in 1957 lends support to this belief.

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