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Trichomonas empyema

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The finding of trichomonads in pleural fluid is a rare event. We report here a case of trichomonas infestation occurring in empyema fluid after operation involving the oesophagus.

Case report

The patient is a 48-year-old white man who, two months before admission, had noted the onset of vague epigastric pain and excessive post-prandial fullness. He had lost 15 pounds during the preceding five months, despite a normal appetite. Gastroscopy revealed a large ulcer crater near the gastro-oesophageal junction which on biopsy proved to be an adenocarcinoma. Physical examination at this time was normal except for poor oral hygiene, a systolic ejection murmur, and a barely palpable, firm, mid-epigastric mass.

Operation was performed on 27 February 1981 through the abdomen. Gastrectomy with resection of 7 cm of oesophagus and reanastomosis, omentectomy, and splenectomy were performed. Pathological examination revealed no tumour cells at the surgical margins but several involved lymph nodes. Because of the development of nodal tachycardia, the patient was transferred to the intensive care unit and remained intubated. After treatment with intravenous digoxin, normal sinus rhythm was re-established. On the following day, the patient developed acute respiratory distress. A chest radiograph revealed bilateral pleural effusions and a large pneumothorax on the right side. Fluid obtained from the right pleural space after intubation was serosanguinous. Despite chest tube drainage during the next three days, pleural fluid continued to accumulate. Gram stain of the pleural fluid revealed abundant eosinophils, polymorphonuclear leucocytes, and Gram-positive cocci in chains and clumps. Numerous (1–5 per high power field) freely mobile trichomonads (not T vaginalis—qv) were visible on wet preparation. Microscopic photographs of the wet preparations were obtained, as well as Papanicolaou and Gram stains. Culture of the fluid grew α-haemolytic streptococci and coagulase-negative staphylococci. Oesophageal instillation of Gastrografin revealed passage of contrast material from the oesophageal suture line into the pleural space. Another chest tube was inserted to establish better drainage of the right pleural space, and treatment with metronidazole, gentamicin and clindamycin was started. Open thoractomy was eventually necessary to improve drainage. With parenteral nutritional support the leak in the anastomosis healed, and the patient is now back at work, eating normally, and on a course of cancer chemotherapy.

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Discussion

To our knowledge, only two cases of trichomonas infestation of pleural fluid have been reported in the medical literature during this century.[1,2] Whether this reflects the true incidence or the lack of routine search for the organism is unknown.

The source of trichomonads in the present case was most likely the mouth and upper gastrointestinal tract, a known habitat of *Trichomonas tenax* species,[3] with infection of the pleural space occurring through the oesophageal-pleural fistula. Search for trichomonads in oropharyngeal washings and sputum, however, gave negative results. Walzer *et al*[2], who described a case with trichomonas empyema, were also unable to find the organism outside the pleural space. It is possible that oropharyngeal trichomonads were too few in number to be found in oral washings and proliferated only in the environment of the pleural fluid. Infection with *Trichomonas hominis*, a commensal sometimes found in the large bowel,[3] seems less probable but cannot be excluded.

Identification of trichomonads is best made by examination of fresh wet preparations. We found, as others have,[2,4] that fixation with Papanicolaou or Gram stains destroys most of the identifying features of the organisms. We, therefore, photographed organisms in the wet preparation. The organisms closely resembled textbook descriptions[3] of *T tenax* and *T hominis*—that is, anterior flagellae, single centrosome, prominent posterior axostyle, and a size range of 5–20 μ. Differentiation between these two species on a morphological basis is not possible.[3]

It is interesting to speculate about a pathogenic versus purely commensal role of the trichomonads in this particular case of pleural effusion. The impressive number of organisms found makes it tempting to suspect the former. While trichomonads in the respiratory tract have usually been found in association with nectrotic debris and pus,[4] the organisms have also been reported to invade normal lung tissue.[5]

Routine examination of wet preparations of pleural fluid and sputa in patients with resection of the oesophagus should be of help in defining more specifically the incidence and significance of this infection.

References

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