Anaerobe 47 (2017) 233–237

Contents lists available at ScienceDirect

Anaerobe

journal homepage: www.elsevier.com/locate/anaerobe

Review article
Case report

Oesophageal pleural fistula presenting with *Parvimonas micra* infection causing cervical and brain abscesses

Anan Shtaya [a, *], Helmut Schuster [b], Peter Riley [c], Kathryn Harris [d], Samantha Hettige [a]

[a] Academic Neurosurgery Unit, St George's University of London, London, UK
[b] Department of Microbiology, University Hospitals Southampton, Southampton, UK
[c] Department of Microbiology, St George's University Hospitals NHS Foundation Trust, London, UK
[d] Department of Microbiology, Virology and Infection Prevention and Control, Great Ormond Street Hospital NHS Foundation Trust, London, UK

ARTICLE INFO

Article history:
Received 27 January 2017
Received in revised form
18 June 2017
Accepted 21 June 2017
Available online 23 June 2017

Handling Editor: Kaori Tanaka

Keywords:
Parvimonas micra
Abscess
Spinal cord
Fistula

ABSTRACT

Parvimonas micra (*P. micra*) infections causing spinal cord compression are extremely rare. We report an occult oesophageal pleural fistula presenting with spinal epidural and brain abscesses resulting in severe neurological deficits caused by *P. micra*. Molecular detection proved to be instrumental in identifying the causative pathogen. Essential management with decompression, drainage, antibiotics and fistula repair lead to a good outcome.

Contents

1. Introduction

Epidural abscesses are uncommon spinal infections. The cervical spine is the least common site in the neuraxis harbouring such infections and can be limb and/or life threatening [1]. They often occur in high risk patients with HIV infection, intravenous drug abusers, diabetics, chronic renal failure patients and patients with malignancies [2]. Haematogenous spread from a distant focus is the usual mechanism of infection; however, contiguous dissemination is another possibility [3]. The main pathogen in spinal infections is *Staphylococcus aureus*, followed by coagulase-negative *Staphylococci*, and *Streptococci*; however anaerobic bacteria are relatively unusual pathogens [3]. *P. micra* is an anaerobic Gram-positive coccus [4] belonging to the common microflora of the oral cavity and gastrointestinal tract. It has been formerly known as *Micromonas micros* and *Peptostreptococcus micros* and was rarely implicated in spinal infections; however, a few cases have been reported

* Corresponding author. Atkinson Morley Neurosurgery Centre, St George's University of London, London SW17 0RE, UK.
E-mail address: ashtaya@sgul.ac.uk (A. Shtaya).

http://dx.doi.org/10.1016/j.anaerobe.2017.06.012
1075-9964/

in literature [5–12] including an intra-orbital and para-spinal infection [13].

We describe an unusual presentation of *P. micra* infection causing a cervical epidural abscess with spinal cord compression and neurological deficits along with multiple small intracranial abscesses in a patient with undiagnosed oesophageal pleural fistula. Urgent surgical decompression, drainage of the epidural abscess, prolonged appropriate antibiotic regime and repair of the fistula improved the patient's outcome.

2. Case report

A 65-year-old asthmatic male presented with a 1-week history of diarrhoea and vomiting, general weakness complained of neck pain 2 days prior to his presentation and developed a lower limb weakness a day before admission. His past medical history included a right pleurodesis and pleurectomy aged 17 for a recurrent pneumothorax.

His admission temperature was 38.9° C. His initial white blood cell count (WBC) was 1520/mm^3 (Neutrophils 1310/mm^3) and C-reactive protein (CRP) was 279 mg/dL. His symptoms progressed to include numbness, pins and needles in his lower and upper limbs, severe bilateral lower limb weakness (MRC grade 2–3), upper limb weakness (MRC grade 3–4) and urinary retention requiring catheterisation. CT scan at the referring hospital revealed a contrast enhancing epidural cervical collection consistent with an epidural abscess (Fig. 1A and B). Intravenous (IV) ceftriaxone (2 g) and dexamethasone (8 mg) were administered immediately before transferring the patient to our neurosurgery unit. A neuraxis MRI revealed an extensive dorsal cervical epidural abscess with cord compression (Fig. 1C and D) and cerebral micro-abscesses in the posterior right cingulate cortex (Fig. 2A) with a tiny pocket of restricted diffusion and an infective focus in right corona radiata (Fig. 2B) as well as in the posterior left periventricular white matter. He underwent emergency cervical laminectomies (C3-7) and drainage of the epidural pus. The brain abscesses were small enough to be treated conservatively. Blood and pus samples were culture negative; gram-staining of the epidural pus showed large numbers of neutrophils, but no organisms were seen, therefore, a pus sample was sent to Great Ormond Street Hospital (GOSH) where broad-range 16S rDNA PCR analysis was performed as previously described [14,15]. The pus sample was strongly positive in this assay and analysis of the resulting 320 base-pair amplicon, that includes variable regions 1 and 2 of the 16S rRNA gene, was performed by BLAST searching against the Genbank database (https://blast.ncbi.nlm.nih.gov). The most closest related sequences were the 16S rDNA sequences from two *Parvimonas micra* type strains, with 99% sequence identity (Genbank accession numbers CP009761.1 and NR_114338.1). This method is currently part of the routine clinical microbiology service at GOSH for the diagnosis of culture-negative infections [16]. The patient was started on a 6 weeks course of IV ceftriaxone (2 g twice a day) and metronidazole (500 mg three times a day) initially which was extended to 12 weeks. Both antibiotics commenced in operating theatre just after

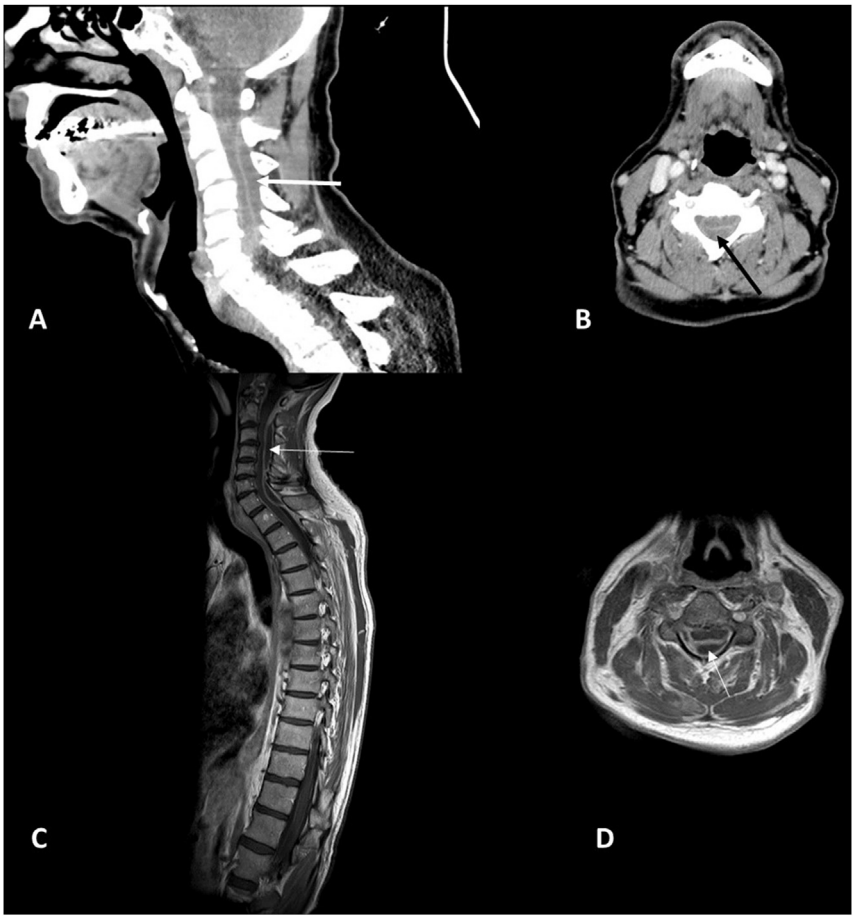

Fig. 1. Pre-operative images. A Post contrast sagittal CT image reveals an epidural enhanced collection between C2-6 (arrow). B Post contrast axial CT image at C4 level showing the epidural abscess (arrow). C Post GAD T1W sagittal image demonstrating an enhanced epidural abscess extending from C2 to T1 (arrow). D Post GAD axial T1W image at C4 revealing the enhanced epidural abscess with spinal cord compression (arrow).