Clinical Case

A 46-year-old male patient with a history of total laryngectomy for glottic cancer underwent placement of a Provox® Vega™ Voice Prosthesis 22.5 FR, 8 mm, using the secondary tracheoesophageal puncture technique. One week later he attended the emergency department with a fever of 39.7 °C despite antibiotic treatment with amoxicillin/clavulanic acid 875 mg/8 h and clindamycin 300 mg/8 h, associated with neck pain and dysphagia. Examination revealed the intramural prostheses surrounded by small granuloma on its left side, with no signs of infection; it was changed and sent for microbiological study. Blood cultures were also taken.

After 10 further days with the same antibiotic treatment associated with antipyretics, we assessed the regimen again at the clinic one month after surgery. At that time the patient had no fever, but his dysphagia with solid foods continued, associated with bilateral cervico-brachialgia. Examination showed selective pain on palpation of both trapezius muscles and on lateral movement of the trunk, radiating to the upper limbs, strength, and sensitivity were preserved.

A cervical radiograph was taken showing mass effect between C4 and C7, it was not possible to define an inflammatory process or tumour recurrence.

Given these results, it was decided to admit the patient and perform a CT scan which showed spondylodiscitis C6–C7, with partial destruction of the anterior aspect of both vertebral bodies and tissue imprint with soft tissue density inside the spinal canal, and an increase in soft tissues in the prevertebral space and hypopharynx, suggestive of inflammation/infection (Fig. 1A).

The results from the microbiology department showed a positive blood culture, and that the prosthesis was colonised by methicillin resistant staphylococcus aureus (MRSA). Therefore treatment was started with vancomycin 1 g/8 h associated with meropenem 1 g/8 h, in line with the antibiogram.

Cervical NMR imaging confirmed the spondylodiscitis shown on the CT scan, the posterior wall of C6 was slightly displaced towards the canal with stenosis/compression of the canal, and there was altered signal in the spinal cord. There appeared to be compressive myelopathy (Fig. 1A and B).

Therefore, an assessment was requested by the neurosurgery department and the department of internal medicine which indicated treatment with ceftazidime...
2 g/8 h and linezolid 600 mg/12 h intravenously for 11 days, and a Philadelphia type rigid collar. The departments requested analysis which showed normal levels of leukocytes, indeterminate CRP (0.93 mg/dl) and elevated ESR (45 mm/h); with normal EMG. The patient was discharged with linezolid 600 mg/12 h and rifampin 600 mg/24 h, to be taken orally for a month and a half.

The follow-up CT scan, performed one month after treatment, showed significant improvement and the lesion almost resolved (Fig. 2A). By contrast, the NMR continued to show the intervertebral image, but with less enhancement (Fig. 2B). Analyses showed normal CRP (0.1 mg/dl) and ESR (7 mm/h) levels.

The patient is currently asymptomatic; X-rays show an almost complete cure of his spondylodiscitis.

**Discussion**

Complications after placement of a phonatory prosthesis are common, and include leakage or fungal colonisation. Other more serious complications include paraoesophageal abscesses, cellulitis, bronchial aspiration of the prosthesis, cervical osteomyelitis and spondylodiscitis.1

Spondylodiscitis is an inflammatory process which initially affects the intervertebral disc and then extends to the vertebral bodies, occasionally affecting the surrounding soft tissues, due to haematogenous spread. In recent years, the incidence of discitis has increased due to the greater number of immunosuppressed, elderly, and iatrogenic patients, and anaesthetic or surgical practices on the spinal column in particular.1,3

In a study performed by Hopkinson et al.,4 it was demonstrated that the principal clinical symptoms were vertebral pain in 91% of patients and fever in 68%. In 58% of cases a diagnosis is reached between 2 weeks and 6 months from the onset of symptoms. The onset is occasionally insidious.

The most common location is lumbar (60%), followed by dorsal (26%-34%), a cervical location is rare (10%-13%).4 This location should be suspected if there is cervical pain with inflammatory characteristics and test results that are suggestive of infection.5

Ninety-five percent of spondylodiscitis are monomicrobial. Gram-positive predominate (69.3%), followed by Gram-negative (21.5%) and fungal, especially in

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**Figure 1** (A) Pre-treatment CT scan showing increased pre-vertebral soft tissues anterior to C5–C7 with collections of fluid at this level (white arrow). (B) Diagnostic NMR showing both vertebral oedema and destruction, such as compressive myelopathy at level C6–C7.

**Figure 2** (A) Post-treatment CT showing a significant decrease of the soft tissue lesion and the disappearance of the fluid levels. (B) Post-treatment NMR where the C6–C7 vertebral destruction is unaltered, but showing compressive myelopathy and ependymal ectasia.
immunosuppressed patients (9.2%). The causative germ in 43.1% of cases is *Staphylococcus aureus*, MRSA in 12.3%.

Early diagnosis is based on thorough anamnesis, appropriate clinical examination, and imaging tests. NMR is the radiological method of choice for diagnosing this condition because it is highly sensitive. Treatment is generally conservative using a rigid collar and associating prolonged broad spectrum antibiotic therapy, generally cloxacillin associated with a third-generation cephalosporin. Specific antibiotic therapy is started when the causative agent is isolated. It is appropriate to use high intravenous doses in the first 2 weeks, then orally until 3 months' treatment has been completed.

There are only 2 similar cases documented in the references. In both cases, the theories postulated were dehiscence of the posterior pharyngeal wall after placement of a rigid oesophagoscopy, accidental puncture of the posterior oesophageal wall and chronic decubitus of a prosthesis of a larger length than necessary. In our case it was probably due to accidental puncture of the posterior oesophageal wall at the time of the puncture. 

In conclusion, persistent neck pain after the insertion of a phonatory prosthesis by puncture should alert us to spondylodiscitis.

**Conflict of Interest**

The authors have no conflict of interests to declare.

**References**