Left vocal cord paralysis caused by coalworkers' pneumoconiosis and progressive massive fibrosis

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Summary: We report a case of recurrent laryngeal nerve palsy caused by coalworkers' pneumoconiosis with progressive massive fibrosis (PMF). This illustrates that PMF alone may be added to the list of lesions which can cause recurrent laryngeal nerve palsy. However, efforts should always be made to exclude more common causes, in particular bronchogenic carcinoma, before attributing the palsy to PMF.

Introduction

Left recurrent laryngeal nerve palsy is most commonly caused by bronchogenic neoplasm. We report an unusual case of left vocal cord paralysis caused by coalworkers' pneumoconiosis (CWP) with progressive massive fibrosis (PMF).

Case report

A 70 year old man presented in May 1986 with a 10 month history of hoarseness of voice initially intermittent but now persistent. He was known to have CWP with PMF and was receiving 60% compensation. He had a long standing cough with mucoid sputum and occasional melanoptysis but was otherwise well. He was a lifelong non-smoker. Past history included a perforated duodenal ulcer for which he underwent vagotomy and pyloroplasty in 1974 and left hemicolectomy for diverticular disease performed in 1984. Physical examination revealed hoarseness of voice but apart from a functioning colostomy and epigastric scar was otherwise normal. There was no enlargement of cervical lymph nodes. Indirect laryngoscopy showed a paralysed left vocal cord. Full blood count, liver function tests and electrolytes were normal. His chest radiograph showed diffuse pulmonary shadows consistent with CWP, bilateral upper lobe PMF and bilateral upper lobe calcification consistent with previous pulmonary tuberculosis (Figure 1). The radiographic appearances had not changed compared with films taken 12 months previously. Tomography showed deviation of the trachea to the right. Sputum was repeatedly negative for malignant cells and tubercle bacilli. Fibreoptic bronchoscopy showed no endobronchial lesion. The patient has since been followed up for two years during which time he has remained hoarse but is otherwise well and his chest radiograph has not changed.

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Figure 1 Chest radiograph showing diffuse pulmonary shadows and upper lobe PMF.
Discussion

In most reported series, malignant tumours of the lung and pulmonary tuberculosis were the commonest causes of recurrent laryngeal nerve palsy.\textsuperscript{1–3} Other common causes include oesophageal and thyroid malignancies,\textsuperscript{4} cervical trauma or surgery to the neck and less commonly neurological disorders including diabetic and alcoholic peripheral neuropathies.\textsuperscript{5}

We were concerned that our patient might have an underlying neoplasm which was not apparent on his chest radiograph because of extensive CWP and PMF. However, bronchoscopy and cytology have failed to confirm the presence of a bronchogenic neoplasm. Moreover, an underlying malignancy is unlikely since the patient has otherwise remained well during the two years following the onset of symptoms with no new radiographic developments. Although he has bilateral upper lobe calcification on his chest radiograph his clinical well-being and negative sputum cultures make tuberculosis unlikely. In the absence of any other recognised condition, we feel that CWP with PMF is the most likely cause of this patient's vocal cord paralysis.

Pressure on the left recurrent laryngeal nerve by pneumoconiotic mediastinal lymph glands or distortion of the mediastinum by PMF has only once been previously reported.\textsuperscript{5} A second similar case has been reported but in this patient neither bronchoscopy nor mediastinoscopy were performed so that a tumour could not be excluded with certainty.\textsuperscript{6} In the former case there was slight improvement in the patient's voice over several days. In our patient, however, hoarseness has persisted for two years without any improvement and spontaneous resolution of his vocal cord paralysis seems unlikely.

Bronchogenic carcinoma may develop insidiously in patients with CWP because pre-existing radiographic abnormalities may obscure its presence. Patients with CWP who develop left recurrent laryngeal palsy, therefore, require careful and thorough investigation including bronchoscopy. However, if investigations fail to disclose a tumour and other causes have been excluded, then it can be concluded that PMF is the cause of the patient's laryngeal nerve palsy.

References

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