

Pathology in Focus

Prostatic adenocarcinoma metastatic to the palatine tonsil: a case report

EWAN K. A. MILLAR,* RICHARD VAUGHAN JONES, F.R.C.S.(ED.), F.R.C.S.†, STEPHEN LANG, M.R.C.PATH.*

Abstract

A case of prostatic adenocarcinoma presenting with dysphagia due to a tonsillar metastasis is described. Details of the clinical history, histopathological and autopsy findings are presented. A review of the literature suggests that this is only the second description of such an occurrence.

Key words: Prostatic neoplasms; Neoplasm metastasis; Adenocarcinoma; Tonsil

Introduction

Metastatic carcinoma of the palatine tonsil is extremely rare (Sellars, 1971). Several primary malignancies with tonsillar secondary spread have been described including renal cell carcinoma, melanoma, carcinomas of the breast, bronchus and stomach (Crawford *et al.*, 1979). Prostatic adenocarcinoma is a common malignancy with a high incidence of metastatic spread but involvement of the tonsil has only been documented once in the literature (Stern, 1923). The clinical and pathological details of another case are described here.

Case report

An 85-year-old male Caucasian presented with a three-week history of progressive dysphagia to solids, at the level of the upper sternum. He had no other local or systemic symptoms. Past medical history included noninsulin-dependent diabetes mellitus, hiatus hernia and two previous transient ischaemic attacks. He had smoked for 60 years, but had stopped one year ago. He consumed fourteen units of alcohol per week.

He was a frail gentleman and oral examination revealed an ulcerating lesion involving the right tonsil. Indirect laryngoscopy revealed a normal larynx and pharynx. Palpation of the right side of his neck revealed a 1.5 × 1.5 cm smooth, hard, mass.

Investigations

A full blood count was normal. Electrolytes were normal except for a raised urea of 16.8 mmol/l and creatinine of 302 µmol/l. Liver function tests, serum calcium and phosphate were normal. Chest X-ray was normal. A barium swallow showed a 5 cm irregular stricture in the mid oesophagus. An oesophagoscopy revealed a stricture at 35 cm, but with no obvious tumour to biopsy. It was subsequently dilated to 20 FG. A right tonsillectomy was also performed. Five days later he required a repeat dilatation; again there was no obvious tumour and the oesophagum mucosa was found to be intact.

Histopathological findings

Histology showed the tonsil to be infiltrated by a poorly-

differentiated malignant tumour with glandular differentiation in one area (Figure 1). Immunocytochemistry showed strong positivity for cytokeratins confirming its nature as a carcinoma, and further staining revealed focal positivity for prostate specific antigen (Figure 2).

Clinical course

As a result of the histology of the tonsillar tumour, further investigations were performed. Rectal examination revealed a small prostate gland, largely smooth and soft with a hard nodule in the left lobe measuring approximately 3 mm. Serum prostate specific antigen was found to be raised at 88 µg/l (Normal range <4 µg/l). A pelvic ultrasound was performed which revealed an echogenic area in the left prostatic lobe, but no other abnormality. He was started on cyproterone 250 mg t.i.d. Unfortunately the patient's general condition deteriorated and he died one month after initial presentation.

Autopsy findings

Autopsy examination confirmed the presence of disseminated prostatic adenocarcinoma. Several sites of involvement were identified: para-aortic and hilar lymph nodes, a right neck node, both adrenal glands, distal rectum and distal oesophagus. The prostate itself appeared macroscopically unremarkable but histological examination confirmed the presence of a primary carcinoma.

Discussion

Primary malignancies involving the tonsil are a relatively common occurrence, most frequently involving squamous cell carcinomas and lymphomas. Metastatic tumours, however, are extremely rare. The Armed Forces Institute of Pathology Registry data (Crawford *et al.*, 1979) contains 1535 cases of malignant neoplasms of the tonsil, of which only 12 were metastatic in origin. Brownson *et al.* (1979) reviewed 76 cases described in the literature – giving an indication of the relative frequency of

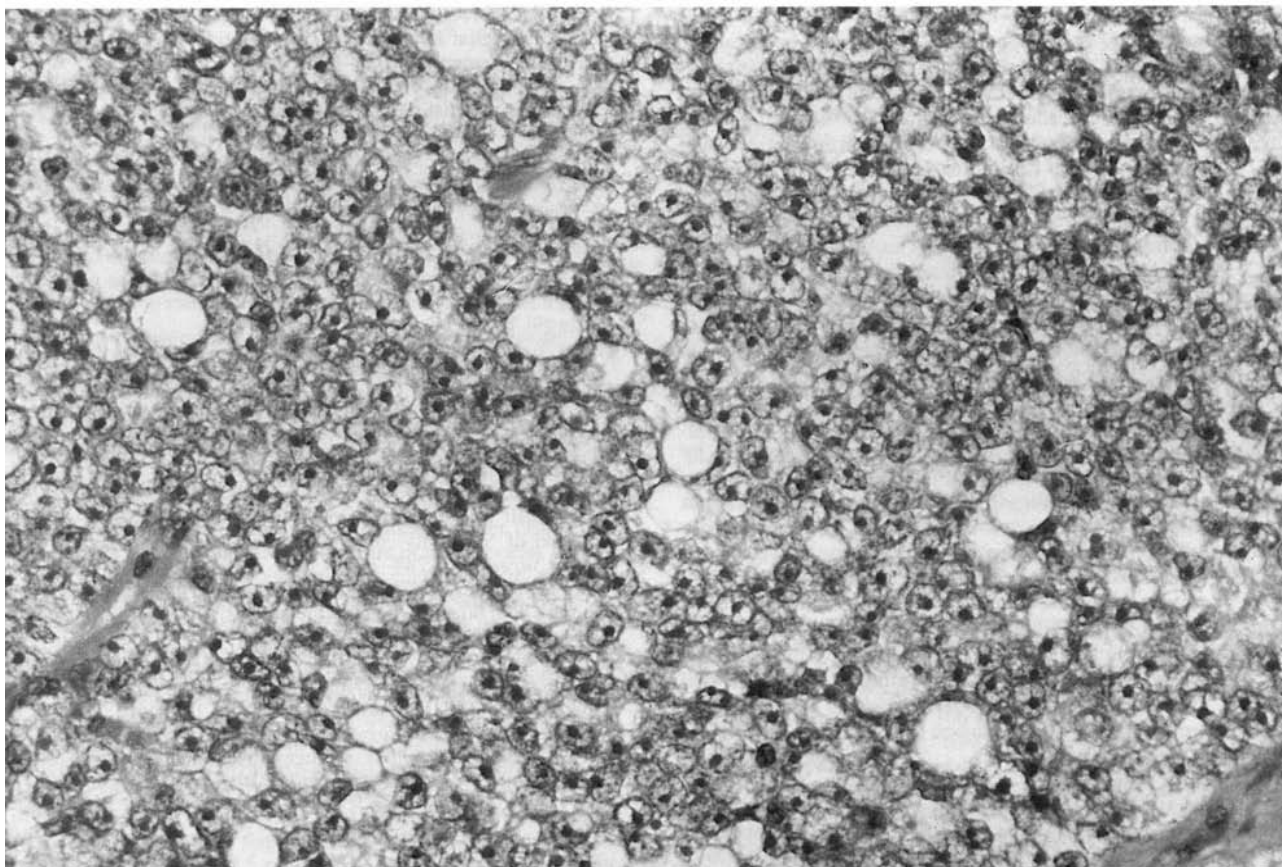


FIG. 1

A poorly-differentiated carcinoma with prominent nucleoli. (H&E; $\times 450$).

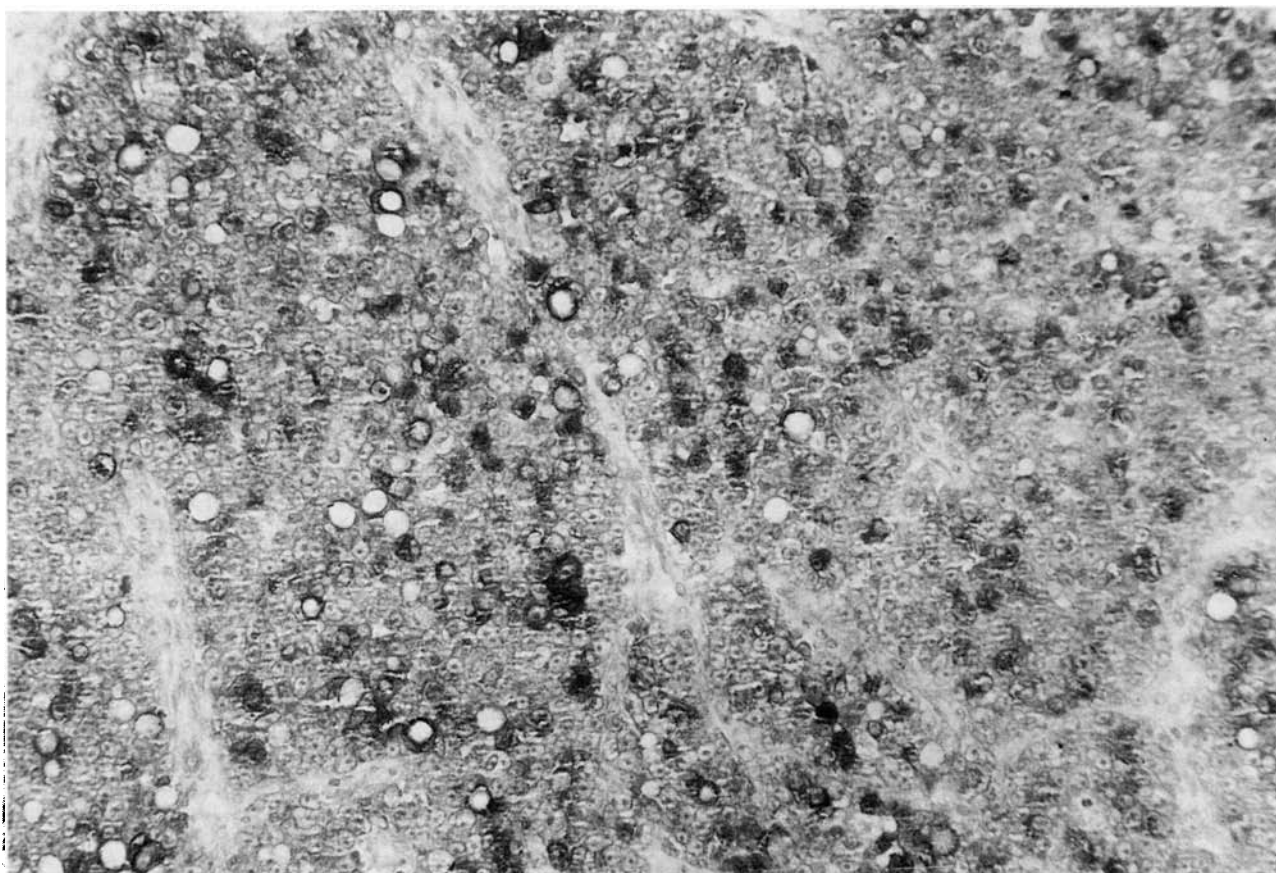


FIG. 2

The tumour displaying focal positivity for prostate specific antigen. (H&E; $\times 225$).

occurrence of each metastatic tumour: most common was renal cell carcinoma (13) and melanoma (13) followed by bronchogenic carcinoma (12), breast carcinoma (11), seminoma (6), gastric adenocarcinoma (5), rectal adenocarcinoma (2) and gall bladder common duct adenocarcinoma (2). Individual cases have also been described of choriocarcinoma (Kutty and Shenoy, 1971), anaplastic thyroid carcinoma (Hadar *et al.*, 1987), pancreatic carcinoma (Maor *et al.*, 1983) and prostatic adenocarcinoma (Stern, 1923). Given the fact that prostatic carcinoma is the third most common male malignancy, in terms of deaths (Ansell, 1992) and that the incidence of metastatic disease is high it is somewhat surprising that this is only the second case reported.

Several routes of metastasis to the tonsil have been proposed. These include haematogenous spread via the paravertebral venous plexus (Batson's plexus) (Asami *et al.*, 1989) and via venous channels draining into the heart and lungs leading to subsequent systemic circulation of tumour cells (Nahum and Bailey, 1963); lymphatic spread has been considered but would, by necessity, have to be retrograde in direction since the tonsil contains only efferent lymphatics (Collins and Spector, 1985). It has also been suggested that in cases of metastasis from lung cancer there may be direct implantation of tumour cells during instrumentation at the time of bronchoscopy (Brownson *et al.*, 1979).

Another unusual feature of this case was the involvement of a right-sided neck node. The literature contains several reviews of metastatic prostatic adenocarcinoma presenting with left-sided lymph node involvement (Jones and Anthony, 1992; Cho and Epstein, 1987) but right-sided nodal metastasis has only been documented on one previous occasion (Butler and Howe, 1971).

References

- Ansell, I. D. (1992) The male generative system. In *The Oxford Textbook of Pathology*, 1st Edition. (McGee, J. O'D.; Isaacson, P. G.; Wright, N. A., eds.), Oxford University Press, Oxford, pp 1539–1543.
- Asami, K., Yokoi, H., Hattori, T., Rao, A. J., Yanagita, N. (1989) Metastatic gall bladder carcinoma of the palatine tonsil. *Journal of Laryngology and Otology* **103**: 211–213.
- Brownson, R. J., Jacques, W. E., La Monte, S. E., Zollinger, W. K. (1979) Hypernephroma metastatic to the palatine tonsils. *Annals of Otolaryngology and Rhinology* **88**: 235–240.
- Butler, J. J., Howe, C. D., Johnson, D. E. (1971) Enlargement of the supraclavicular lymph nodes as the initial sign of prostatic carcinoma. *Cancer* **27**: 1055–1063.
- Cho, K. R., Epstein, J. I. (1987) Metastatic prostatic carcinoma to supraclavicular lymph nodes. *American Journal of Surgical Pathology* **11**: 457–463.
- Collins, S., Spector, G. J. (1985) Cancer of the oral cavity, oropharynx and pharynx. In *Diseases of the Nose, Throat, Ear, Head and Neck*, 13th Edition. (Ballenger, J. J., ed.), Lea and Febiger, Philadelphia, pp 660–662.
- Crawford, B. E., Callihan, M. D., Corio, R. L., Hyams, V. J., Karnei, R. F. (1979) Symposium on malignant disease of the oral cavity and related structures. *Otolaryngologic Clinics of North America* **12**: 29–43.
- Hadar, T., Mor, C., Har-El, G., Sidi, J. (1987) Anaplastic thyroid carcinoma metastatic to the tonsil. *Journal of Laryngology and Otology* **101**: 953–956.
- Jones, H., Anthony, P. P. (1992) Metastatic prostatic carcinoma presenting as left-sided cervical lymphadenopathy: a series of eleven cases. *Histopathology* **21**: 149–154.
- Kutty, M. K., Shenoy, A. V. (1971) Metastatic choriocarcinoma of the tonsil following hysterectomy for an invasive mole and a period of 'inactivity' of trophoblastic tissue. Report of a case. *Oral Surgery* **32**: 248–252.
- Maor, E., Tovi, F., Sacks, M. (1983) Carcinoma of the pancreas presenting with bilateral tonsillar metastases. *Annals of Otolaryngology and Rhinology* **92**: 192–195.
- Nahum, A. M., Bailey, B. J. (1963) Malignant tumours metastatic to the paranasal sinuses. *Laryngoscope* **73**: 561–563.
- Sellars, S. L. (1971) Metastatic tumours of the tonsil. *Journal of Laryngology and Otology* **85**: 289–292.
- Stern, A. (1923) Das Schicksal eingeschwemmter Geschwatzellen in der lunge. *Virchow's Archiv für Pathologische Anatomie* **241**: 219–321.

Address for correspondence:

Ewan Millar,
Department of Pathology,
The University of Edinburgh,
Medical School,
Teviot Place,
Edinburgh EH8 9AG.