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Tonsillar metastasis from adenocarcinoma of the stomach

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Abstract
Metastatic carcinoma of the tonsil is rare with only some 100 cases having been reported in the literature, of which nine have resulted from stomach carcinoma. Tonsillar metastases rarely become apparent before the diagnosis of the primary neoplasm. We describe here the clinical and histopathological findings of a case of unilateral palatine tonsil metastasis as the first sign of a signet-ring cell carcinoma of the stomach. This has not been reported previously.

Key words: Tonsillar neoplasm; Carcinoma; Neoplasm metastasis; Stomach neoplasms

Introduction

Metastatic tumours of the head and neck from distant primary malignancies are not found very frequently (Friedmann and Osborn, 1965; Bernstein *et al.*, 1966) and the occurrence of tonsillar metastases from non-haematologic malignant neoplasms are very rare, complying with the Virchow rule (Kleinschmidt, 1966) that metastases are unusual in areas where primary neoplasms are to be found. In the literature reviewed, fewer than 100 cases of metastatic carcinoma of the palatine tonsil have been reported (Sellars, 1971; Brownson *et al.*, 1979; Monforte *et al.*, 1987), the commonest primary malignancies being melanoma, lung carcinoma, breast carcinoma and hypernephroma (Brownson *et al.*, 1979; Monforte *et al.*, 1987). Of these cases, only nine were tonsillar metastases from a gastric adenocarcinoma (Israel, 1897; Kleinschmidt, 1966; Alekseev, 1968; Grippaudo, 1968; Miagky, 1968; Passmore *et al.*, 1982; Gallo *et al.*, 1992). In the majority of cases, the metastasis becomes apparent after recognition of the primary tumour and is generally part of a widespread systemic disease. The occurrence of a tonsillar metastasis as the first manifestation of an occult neoplasm has been described but only in hypernephromas, and carcinomas of the pancreas and the lung (Monforte *et al.*, 1987). In the present paper, a case of gastric signet-ring cell carcinoma in which the presenting symptoms were due to palatine tonsil metastasis is reported.

Case report

A 42-year-old man first presented in the University Hospital in February 1993 because of a five-week history of discomfort in the throat, left tonsillar enlargement and moderate fever in the evening which had been treated with antibiotics. The only prior illness was a duodenal ulcer diagnosed by fibroscopy five years earlier. The examination revealed a slightly enlarged left tonsil, with a non-ulcerated brownish mass in the superior pole (Figure 1) and there were no cervical adenopathies. Laboratory data were: haemoglobin 11.5 g/dl, haematocrit 34.2 per cent, platelets 428 000/mm^3 and an erythrocyte sedimentation rate of 50 mm at the first hour. The remaining routine examinations of blood and urine were within normal limits. As a tonsillar tumour was suspected, the patient underwent surgery, although neither an invasion of the tonsillar capsule nor abundant bleeding was observed.

The histopathological diagnosis was adenocarcinoma in the tonsillar region.

A week later, the patient was hospitalized again because he reported discomfort and abdominal swelling and ascitic liquid was found. The cytological examination of the aspirate showed glandular epithelial cells indicating the existence of an adenocarcinoma. The CT scan of the abdominal region revealed the presence of a mass in the

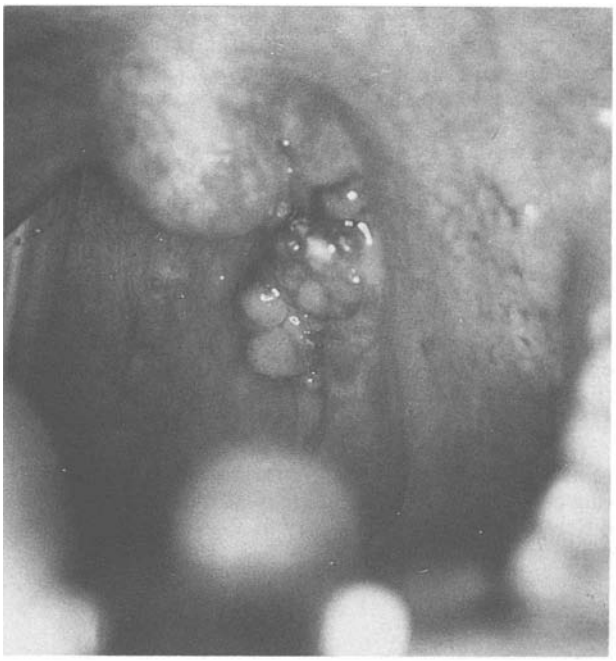

FIG. 1
The tonsillar mass on inspection.

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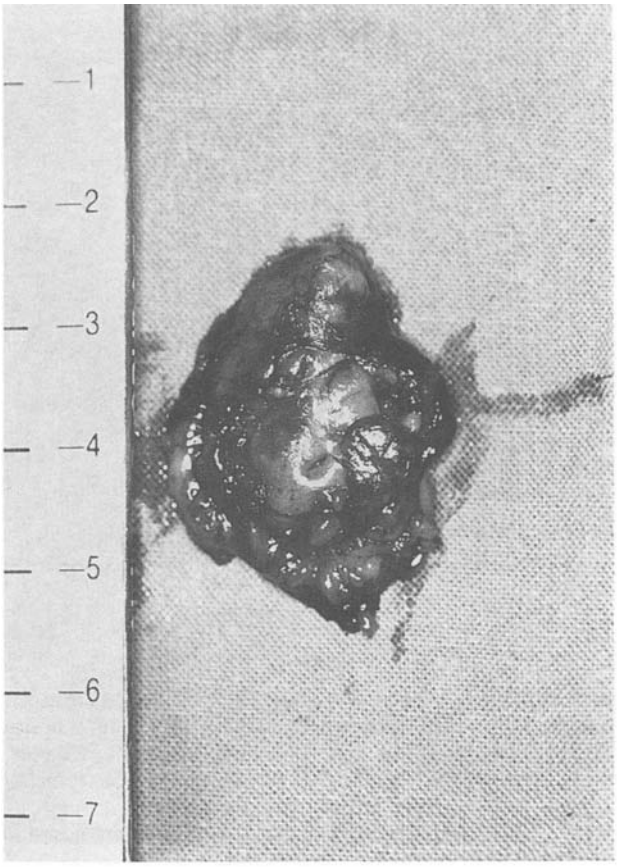

FIG. 2
Excised tumour.

epigastrium near the posterior wall of the stomach and pancreas body, left adrenal gland enlargement and retroperitoneal adenopathies of more than 2 cm, especially near the left renal hilum. An ulcerated mass was found in the gastric antrum by fibroscopy and the tumour extended by the lesser curvature to the gastric body. After biopsy signet-ring cell carcinoma was diagnosed.

After combined chemotherapy (carboplatin and etoposide), the patient died two months later, in May 1993. An autopsy was not permitted.

Histopathological findings

The resected tonsil measurements were 3 × 1.5 × 1.5 cm (Figure 2). In section, a 1 cm nodular region similar in appearance to lymphoid tissue was evident. Microscopic study revealed multifocal nests and isolated cells with epithelial features and a glandular shape in many instances (Figure 3). The glands were PAS and carcinoembryonic antigen (CEA) positive. No signet-ring cells were found.

Gastric biopsy showed the normal glandular tissue replaced by a neoplastic uniform profileration of signet-ring cells and there were no areas with different grades of differentiation. Their positivity to PAS and to CEA was very strong.

Discussion

Among all the published cases, four have been reported in the English literature, three in the Russian and two in the German. In 1965, Friedmann and Osborn cited Joseph (1907) as the author of the only published case of stomach carcinoma with metastasis in a tonsil. Later reviews from Sellars (1971) and Brownson *et al.* (1979) to the latest (Gallo *et al.*, 1992) reported the same. However, reading Joseph's paper, we realized that what was in fact described was breast carcinoma with gastric metastasis which revealed a neoplastic spread also affecting the palatine tonsils. The reviewed literature shows that four of the nine reported cases metastasized on the left tonsil (Kleinschmidt, 1966; Alekseev, 1968; Grippaudo, 1968; Passmore *et al.*, 1982) and four did so bilaterally (Israel, 1897; Gallo *et al.*, 1992). Bilateral tonsillar involvement is common in melanoma metastases (46 per cent), seminomas (40 per cent), stomach (40 per cent) and breast (33 per cent) carcinoma and it is uncommon in bronchogenic carcinoma (17 per cent) and hypernephroma (eight per cent). When only one tonsil is affected it is more commonly the left, except in melanoma (Brownson *et al.*, 1979). The time lapse between the diagnosis of gastric carcinoma and the tonsillar metastases varied from seven to 18 months. Hypernephroma is the only tumour in which tonsil metastases are the first evidence of disease with any regularity (Brownson *et al.*, 1979), nevertheless in one case of pancreatic carcinoma and in a carcinoma of the lung, the tonsillar involvement was also the first evidence of neoplastic disease (Monforte *et al.*, 1987). Our patient is the first described case of adenocarcinoma of stomach in which the tonsillar metastasis was evident before other symptoms. The age range was from 44- (Passmore *et al.*, 1982) to 82-years-old (Grippaudo, 1968), 60 being the average. The sexes were about equally affected. In the present case, the 42-year-old patient is the youngest of all the reported cases of tonsillar metastases from a gastric carcinoma and, in addition, this metastasis appeared before the carcinoma had started clinically manifesting itself. In general, when there is a neoplasm in the tonsillar region the symptoms and findings are unspecific but depend on the size of the tumour and on the secondary alterations such as ulceration and infection (Kleinschmidt, 1966). The atypical dark colour may even be indicative of a mycotic infection (Gallo *et al.*, 1992). In our case due to a lack of local symptomatology, good motility of the tonsil, absence of cervical adenopathies and the colour of the tumour, we suspected a benign neoplasm such as haemangioma. When the diagnosis of adenocarcinoma was made, the absence of capsular invasion and general symptoms led us to question whether the tumour was primary or metastatic. Despite the fact that there are glands in the tonsil, very few cases of salivary-gland type tumours (pleomorphic adenoma, adenoid-cystic carcinoma) can arise in the tonsillar region (Matsuba *et al.*,

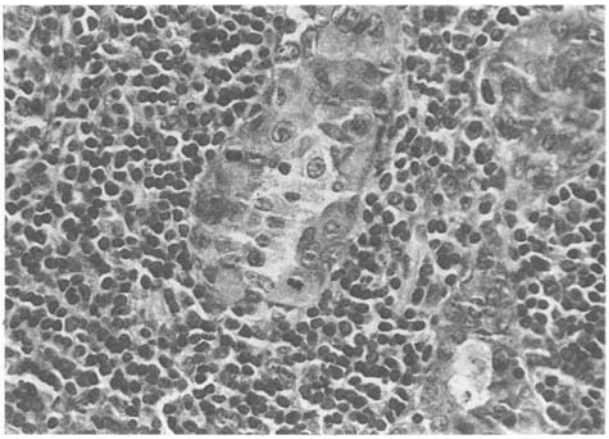

FIG. 3
Photomicrograph of a section of the metastatic lesion in the tonsil. Two glandular lumens are observed. (H & E; × 45).

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1988; Gallo *et al.*, 1992) and none of them present features of adenocarcinoma.

The metastatic pathway is difficult to determine as the palatine tonsils do not have afferent lymphatic vessels and therefore only retrogradely transported cells should arrive in this way. This is true for seminomas but is thought very unusual in other tumours (Brownson *et al.*, 1979). Another possibility is dissemination by the haematogenous route. Tumour cells may go through the portal circulation beyond hepatic and pulmonary filters to the heart, finally being distributed to the tonsil throughout the arterial systemic circulation (Gallo *et al.*, 1992). However, it is thought that tumour cells in the majority of cases reach the head and neck by bypassing the lungs, possibly through the paravertebral plexus of Batson (Batson, 1942). The Valsalva manoeuvre may contribute to this pattern of spread due to reversals in blood flow during these manoeuvres. Finally, some authors believe in the possibility of metastases by direct translumenal implantation which is favoured by a previous lesion in the mucosa of the palatine tonsil and if it is a gastric adenocarcinoma might be either secondary to regurgitation from the stomach (Kleinschmidt, 1966) or at the time of endoscopy (Passmore *et al.*, 1982). This mechanism has been suggested for pulmonary tumours following bronchoscopy (Brownson *et al.*, 1979). However, we agree with Passmore in that all the above theories do not explain why the left tonsil is more commonly involved in metastases than the right (Passmore *et al.*, 1982). The mean survival time for patients with tonsillar metastases is short, irrespective of the type of primary tumour (Brownson *et al.*, 1979). Our patient died three months after the diagnosis of tonsillar metastasis.

Conclusion

We believe that when a tumour exists in the tonsil, histological confirmation is necessary for a correct diagnosis and if the neoplasm is an adenocarcinoma, metastatic origin must be suspected and this can be of paramount importance when, as in the present case, it is the first manifestation of a hidden neoplasm. Since we do not have a specific marker which allows us to perform an accurate diagnosis of gastric adenocarcinoma metastases, we believe an endoscopic study is necessary in patients with adenocarcinoma of the tonsil.

References

Alekseev, V. A. (1968) Metastasis of gastric cancer into the palatine tonsil. *Vestnik Otorinolaringologii (Moskva)* **30:** 107.

Batson, O. V. (1942) The role of the vertebral veins in metastatic process. *Annals of Internal Medicine* **16:** 38–45.

Bernstein, J. M., Montgomery, W. W., Balogh, K. (1966) Metastatic tumors to the maxilla, nose and paranasal sinuses. *Laryngoscope* **76:** 621–650.

Brownson, R. J., Jaques, W. E., LaMonte, S. E., Zollinger, W. K. (1979) Hypernephroma metastatic to the palatine tonsils. *Annals of Otology, Rhinology and Laryngology* **88:** 235–240.

Friedmann, I., Osborn, D. A. (1965) Metastatic tumours in the ear, nose and throat region. *Journal of Laryngology and Otology* **79:** 576–591.

Gallo, A., Pescarmona, E., Crupi, J., Corsetti, G. L., De Vincentiis, M. (1992) Bilateral tonsillar metastasis of gastric adenocarcinoma. *Head and Neck Surgery* **14:** 55–57.

Grippaudo, M. (1968) A case of metastatic adenocarcinoma in the tonsil. *Journal of Laryngology and Otology* **82:** 645–648.

Israel, O. (1897) Magenkrebs mit ungewöhnlicher sekundärer Ausbreitung insebesondere im Darmcanal, Recurrenslämmung und Benerküng uber kunstliche Beleuchtung. *Berliner Klinische Wochenschrift* **34:** 68–70.

Joseph, G. (1907) Ein Fall von metastatischem Magencarcinom. *Deutsche Medizinische Wochenschrift* **33:** 460–461.

Kleinschmidt, H.-J. (1966) Tonsillen Metastasen bei primaren Bronchial-und Magenkarzinom. *Zeitschrift fur Laryngologie, Rhinologie, Otologie und Ihre Grenzgebiete* **45:** 389–394.

Matsuba, H. M., Mauney, M., Simpson, J. R., Thawley, S. E., Pikul, F. J. (1988) Adenocarcinomas of major and minor salivary gland origin: A histopathologic review of treatment failure patterns. *Laryngoscope* **98:** 784–788.

Miagky, M. A. (1968) Metastasis of stomach cancer to skin and tonsil: Two observations. *Voprosy Onkologii (Leningrad)* **14:** 88–90.

Monforte, R., Ferrer, A., Montserrat, J. M., Picado, C., Palacin, A. (1987) Bronchial adenocarcinoma presenting as a lingual tonsillar metastasis. *Chest* **92:** 1122–1123.

Passmore, A. L., Hugh, T. B., Coleman, M. J. (1982) Tonsillar metastases from adenocarcinoma of the stomach. *Australian and New Zealand Journal of Surgery (Victoria)* **52:** 371–372.

Sellars, S. L. (1971) Metastatic tumours of the tonsil. *Journal of Laryngology and Otology* **85:** 289–292.

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