

## Pathology in Focus

# Spindle-cell carcinoma of the nasal septum

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### Abstract

Spindle-cell carcinoma of the nasal septum is an extremely rare malignancy. Such a case along with the salient features of this variant of squamous cell carcinoma and a review of literature on carcinoma of the nasal septum is depicted.

**Key words:** Nasal septum; Carcinoma, spindle-cell

### Introduction

Primary malignancy of the nasal septum is rare (Batsakis, 1979; Young, 1979). The first case of carcinoma of the nasal septum was described by Gibb in 1902, since then the reported cases have been sporadic and scarce. The same view was re-iterated by Ringertz (1938) and St. Clair Thomson and Negus (1955). Review of the literature confirms this. Total reported cases of carcinoma of the nasal septum are fewer than 200.

Malignant tumours of the nasal cavity and paranasal sinus comprise 0.2 per cent of all cancers (Martin, 1948). Approximately 90 per cent of the primary malignancies of nasal cavity are squamous cell carcinoma. Similar trends are seen in carcinoma of the nasal septum also. Besides squamous cell carcinoma other histopathological types of tumours of the nasal septum reported are malignant melanoma, cylindric cell carcinoma (transitional cell carcinoma), adenocarcinoma, anaplastic carcinoma, reticulosarcoma (reticulum cell sarcoma), mucoepidermoid carcinoma, plasmacytoma, adenoid cystic carcinoma (Young, 1979), fibrosarcoma, lymphoepithelial carcinoma (lymphoepithelioma), osteogenic sarcoma and chondrosarcoma (Bomer and Arnold, 1971).

Spindle-cell carcinoma, clear-cell carcinoma, cylindric-cell carcinoma and lymphoepithelial carcinoma are said to be the variants of squamous cell carcinoma. These variants are said to be more sensitive to radiotherapy than squamous cell carcinoma itself. Among these variants the cases of cylindric cell carcinoma (Young, 1979) and lymphoepithelial carcinoma (Bomer and Arnold, 1971) have been reported but no prior case of spindle-cell carcinoma of the nasal septum was found among the extensive reviews scanned.

Various synonyms of spindle-cell carcinoma described are pseudosarcoma (Lane, 1957), pleomorphic carcinoma, carcinosarcoma (Minckler *et al.*, 1970; Staley *et al.*, 1971), pseudocarcinoma, pseudosarcomatous carcinoma, metaplastic carcinoma, sarcomatoid carcinoma, spindle-cell

squamous carcinoma, polypoid carcinoma and spindle-cell carcinoma (Lichtiger *et al.*, 1970).

### Case report

A 40-year-old Hindu male farmer presented with the

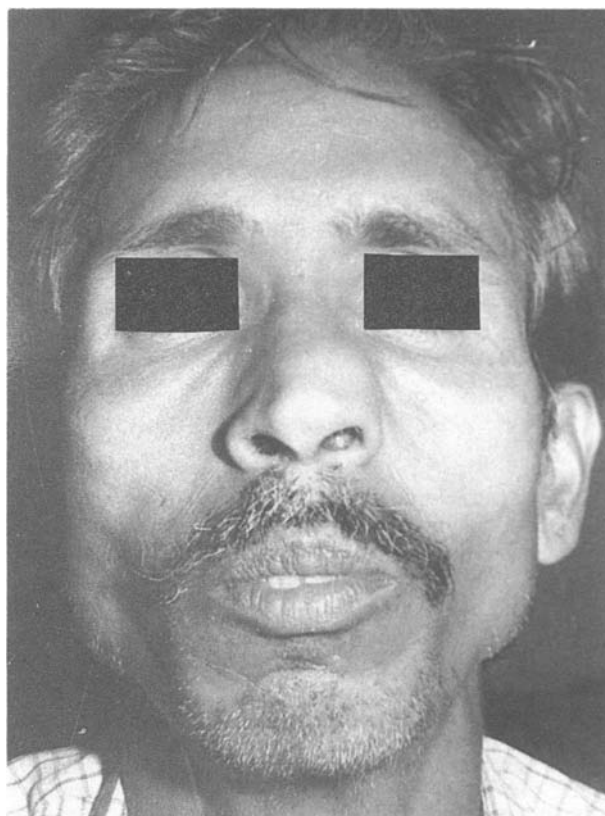


FIG. 1

Photograph showing fullness and bulging on the left side of nose.

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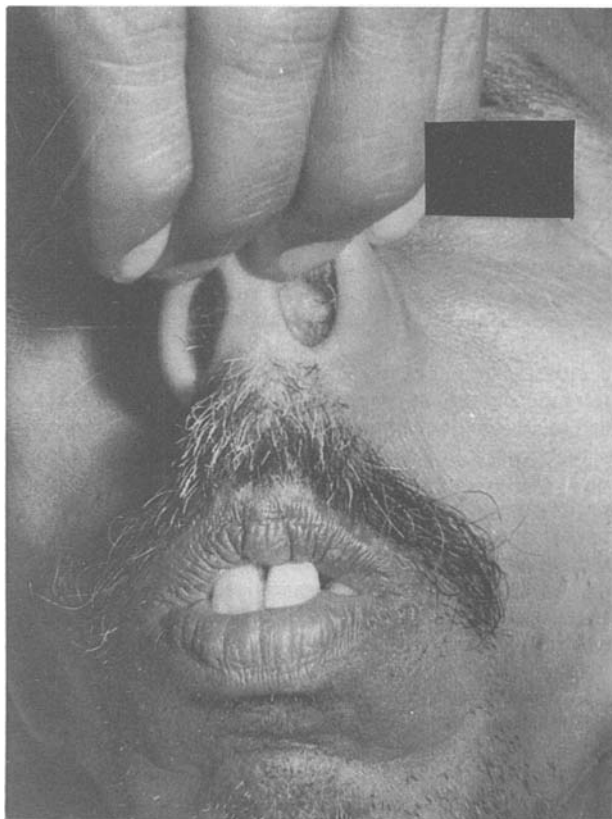


FIG. 2

Photograph showing mass filling the left nasal cavity.

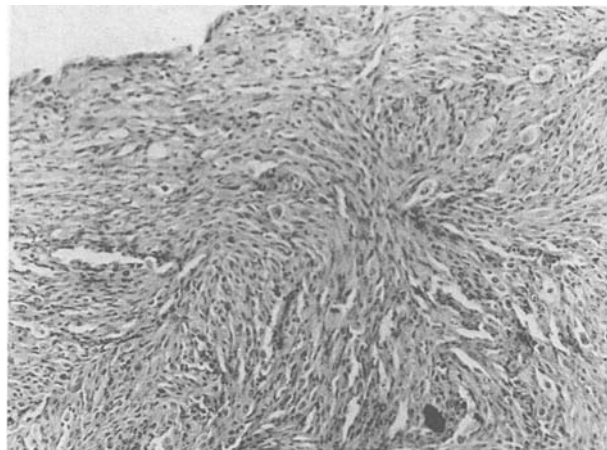
complaints of recurrent epistaxis for one year, mass in the left nasal cavity and a unilateral nasal obstruction on the same side for two months.

On examination, there was fullness and bulging on the left side of the nose (Figure 1). Anterior rhinoscopy revealed a greyish-white mass of 2 cm diameter filling the left nasal cavity anteriorly near the mucocutaneous junction (Figure 2). Prominent vessels were seen on the surface of the mass but there was no ulceration. A probe could be passed around the mass except medially. The mass was firm, non-tender and did not bleed on probing. The rest of the examination including posterior rhinoscopy and palpation of the neck was unremarkable. Haematology and X-ray of the paranasal sinus were normal.

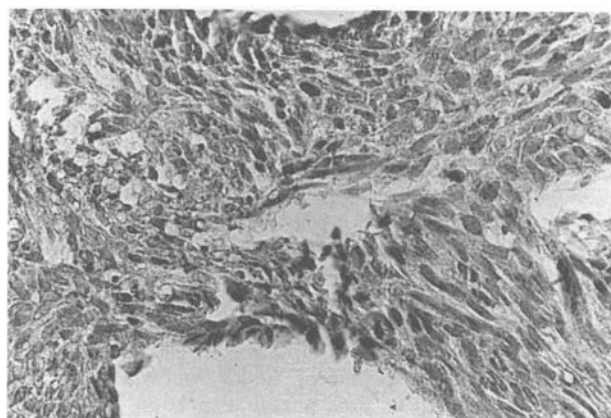
With a clinical diagnosis of a bleeding polyp of the nasal septum, polypectomy under general anaesthesia was carried out but bleeding during surgery was not as marked as usually occurs in cases of bleeding polyps of the nasal septum. Anterior nasal packing with bismuthiodoform paraffin paste (BIPP) was performed which was removed on the fifth post-operative day. The excised mass was sent for histopathological examination. The patient was fully relieved of his symptoms.

The histological pattern was found to be extremely variable (Figures 3a-c). The spindle-cell component occupied the greatest portion of the neoplastic mass, masking squamous carcinomatous areas. The cellular structure was composed of abundant parallel spindle-cells containing large round or oval nuclei with prominent single or multiple nucleoli and bipolar cytoplasmic processes. Mitotic activity, nuclear atypia and occasional multinucleated giant cells were also seen. The arrangement of cells in places was storiform or even perivascular. 'Streaming' or 'dropping off' of the squamous carcinoma cells into the spindle element was present. In the spindle-

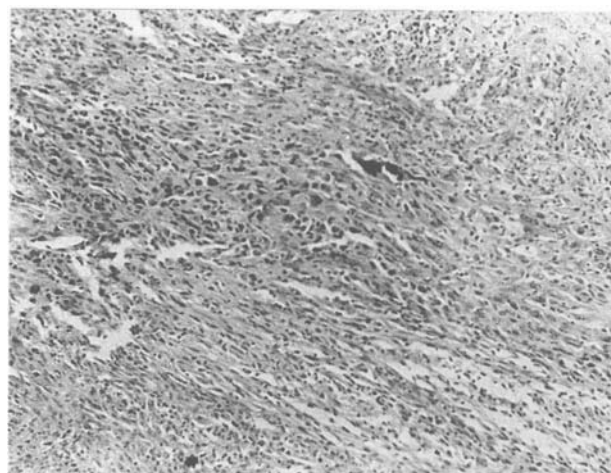
cell component, a prominent collagen and reticulin fibre network was demonstrated by Masson's trichrome stain. A negative alcian blue staining revealed an absence of atypical cartilage or osteoid tissue or even myxomatous degeneration of stroma between the cells. An immunohistochemical study employing the OSB-labelled Avidin-Biotin complex method ('Zyomed' USA) showed the presence of immunoreactive pancytokeratin, and vimentin in the tumour cells, thereby confirming the diagnosis of spindle-cell carcinoma. Electron microscopy was not



(a)



(b)



(c)

FIG. 3 (a-c)

Histopathology of the excised mass showing spindle-cell carcinoma (H&E;  $\times 100$ ).





FIG. 4

Photograph showing the scar mark of a left-sided neck dissection – six weeks post surgery.

possible. The diagnosis of the spindle-cell variant of squamous cell carcinoma was further confirmed by the detection of metastasis of a frank squamous cell carcinoma in the enlarged submandibular lymph node during follow-up study.

With the diagnosis of carcinoma of nasal septum, the patient was sent for radiotherapy and was followed up.

Two months after the completion of radiotherapy the patient developed ipsilateral nodal metastasis in the submandibular region. Fine needle aspiration (FNAC) of the node depicted it as metastatic squamous cell carcinoma. The patient was advised to undergo radical neck dissection but he was reluctant to undergo further surgery. Two months later he consented to surgery when the examination of the neck revealed two lymph nodes in the left submandibular region (level I), 3 cm and 1 cm in diameter, both were mobile, nontender and firm to hard on palpation. Left-sided modified radical neck dissection was performed (Figure 4). Histopathology revealed a poorly differentiated squamous cell carcinoma. The patient has been well for the last year and continues to be followed up.

### Discussion

Carcinoma of the nasal septum is rare with few reports in the literature (Table I).

The commonest site for neoplasm of the nasal septum is the anterior portion of septum with or without encroachment of the mucocutaneous junction. The classical site described by St. Clair Thomson and Negus (1955) is 'the palatine process of superior maxilla at the junction of floor and septum' though there are reports of a posterior location of the tumour also. The most frequent site of occurrence is Kiesselbach's area (Goldstein and Sisson,

1980). Septal carcinoma may be papillary or sessile (Weimert *et al.*, 1978).

Symptoms of a malignancy of the nasal septum are nasal obstruction, a mass in the nose, hyposmia, epistaxis, dental pain, headache and enlarged cervical nodes. The mass in the nose usually presents as a friable warty or granular lesion. Infiltrating lesions may present with excessive crusting, ulceration and perforation of nasal septum. Other features can be intermittent bleeding and external nasal deformity. Ophthalmological signs like proptosis, diplopia, epiphora and hypertelorism are seen in the advanced stage of the disease with local tumour extension.

Treatment regimens may include local surgical excision, radiotherapy or a combination of both. Tumours at or near the mucocutaneous junction are especially difficult to treat as the margin of clearance is difficult to identify because of submucosal infiltration and spread along fascial planes. A one centimetre cuff of uninvolved mucosa and underlying perichondrium with cartilage and preservation of contralateral mucosa is the standard recommendation. The American school of thought has favoured primary surgery and considered nasal dryness and post radiation chondritis, the reasons for reluctance to use radiation in early cases (McComb and Martin, 1942; Deutsch, 1966).

Necrosis and sloughing of nasal tip following radiotherapy or the defect created by extensive resection of septal malignancy often needs plastic reconstruction.

Nodal metastasis may occur early or relatively late and the spread is first to the perivascular lymph node associated with facial artery at the notch of mandible or to the lymph node overlying the parotid gland (Weimert *et al.*, 1978). Jugulodiaphragmatic and submandibular lymph nodes may be involved. As septal malignancy is a midline cancer, nodal metastasis may occur on the ipsilateral or contralateral side. For this reason and because of the relatively low incidence of nodal metastasis, prophylactic neck dissection should not be performed but should be reserved for those patients with clinical evidence of nodal metastasis.

The overall survival of patients with cancer of the nasal septum is good compared to that of other cancers of the paranasal sinus. Nearly 70 per cent treated surgically were cured with initial treatment. The further posterior on the septum the tumour originates, the poorer the outlook (Desanto, 1986). Regardless of the modality of treatment or combination of techniques metastatic disease almost always excludes a successful outcome.

The present case is unique as it reported with recurrent epistaxis and clinically masqueraded a bleeding polypus of the nasal septum and was histologically diagnosed as spindle-cell carcinoma. Epistaxis is not a common

TABLE I  
REPORTED CASES OF CARCINOMA OF NASAL SEPTUM WITH VARIED HISTOLOGY

Author	New cases reported	Total cases after review
Gibb (1902)	1	—
Ringertz (1938)	2	—
Arslan (1945)	14	—
Sooy (1950)	3	—
Capps and Williams (1950)	6	—
Deutsch (1966)	1	27
Lyons (1969)	7	—
Yarrington <i>et al.</i> (1969)	5	—
Martin and Hesdorffer (1972)	1	—
Weimert <i>et al.</i> (1978)	14	97
Young (1979)	43	140
Beatty <i>et al.</i> (1982)	58	198

presentation of the various variants of squamous cell carcinoma among which spindle-cell carcinoma is one which is an extremely rare primary malignancy of the nasal septum.

Aetiologically, spindle-cell carcinoma is probably stimulated by the same factors as squamous cell carcinoma. Histogenesis of tumour is disputable with two ideological camps. One supports the origin of a sarcomatous component as a non-neoplastic, albeit histologically atypical mesenchymal response to various stimuli (Lane, 1957; Friedel *et al.*, 1976) and the other favours a neoplastic epithelial source for spindle-cells (Appelman and Oberman, 1965; Lichtiger *et al.*, 1970).

Various synonyms of spindle-cell carcinoma reflect the different interpretations of the histological patterns of the tumour and the origin of spindle-cells. It may be described as a 'Collision tumour' due to the concept of two separate malignant elements. Metastasis most often comprises of only an epithelial malignancy as in the present case although biphasic or even only spindle-cell metastasis has been observed (Minckler *et al.*, 1970; Staley *et al.*, 1971). Various prognostic factors described are: the size of carcinomatous element of the tumour (Lane, 1957), the gross appearance of the tumour, polypoid form being associated with favourable prognosis (Appelman and Oberman, 1965), differentiation of true squamous carcinomatous component (Friedel *et al.*, 1976) and the degree of infiltration of neoplasm (Leventon and Evans, 1981).

Local recurrences follow in about half of the patients treated with surgical excision or radiotherapy in cases of spindle-cell carcinoma. The prognosis of spindle-cell carcinoma is poorer than for other squamous carcinomas of the same site and extension and it is even worse for sinonasal spindle-cell carcinoma as the primary site influences mortality (Batsakis, 1979). Thus the patient with spindle-cell carcinoma of nasal septum must be kept under close follow-up.

### Summary

Primary malignancy of the nasal septum is rare. With the inclusion of the present rare case, reported cases of carcinoma of nasal septum totals 199. Squamous cell carcinoma is the commonest histopathologically. Spindle-cell carcinoma is an extremely rare septal malignancy with disputable histogenesis. Epistaxis is a rare presentation of spindle-cell carcinoma. The prognosis of spindle-cell carcinoma especially in the sinonasal zone is poorer than that of squamous cell carcinoma.

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