MALIGNANT TERATOID TUMOUR (TERATOCARCINOSARCOMA) OF NASAL CAVITY

(Case Report)

Lt Col NK PANICKER^{*}, Col RAMJI RAI⁺,
Lt Col KAILASH CHAND[#]

MJAFI 1998; 54 : 355-356

KEY WORDS : Malignant teratoid tumour; Teratocarcinosarcoma; Nasal cavity

Introduction

Polypoid masses are commonly encountered clinical entity in the nasal cavity. Among the neoplastic lesions, malignant teratoid tumour variously termed as blastoma, teratoid carcinosarcoma, malignant teratoma, teratocarcinoma and recently called teratocarcinosarcoma (TCS) etc are probably a homogeneous group of neoplasms with more or less similar histological features [1]. These tumours are exceptionally rare and only 26 published cases could be found by 1991 in the world literature [2].

We recently encountered one such case and were encouraged to publish the same due to its rarity, confusing histomorphology and varied nomenclature.

Case Report

A 46 years old male presented with gradually increasing difficulty in breathing and recurrent epistaxis from right nasal cavity of four months duration. He noticed a polypoid mass protruding out and obstructing the right nostril of three months duration and bulge on right side of the nose of two months duration. On rhinoscopy there was a smooth surfaced glistening mass filling the entire right nasal cavity, displacing the nasal septum to left side and protruding posteriorly in the nasopharynx. Computerised tomography scan of paranasal sinuses confirmed the above findings and revealed the extension of the mass to the ethmoid sinus superiorly and compressing the concha laterally. The tumour was excised and sent for histopathological examination.

The gross characteristics of the tumour revealed a 5 x 2 cm smooth surfaced polypoid mass along with pieces of irregular tissue. The tumour was moderately firm, reddish white and showed small foci of necrosis on cut section. Histological features of the tumour showed a mixture of distinct neoplastic glandular epithelial elements and sarcomatous stroma showing prominent rhabdomyoblastic differentiation. The epithelial elements were in the form of large nests of poorly differentiated epithelial cells with some irregular nests showing glandular, cribriform or transitional like features. At most of the places the stroma showed long spindle shaped fibrocytic or fibroblastic cells with abundant eosinophilic

cytoplasm in a slightly myxoid background. The stroma in addition showed areas simulating a low grade fibrosarcoma with atypical myoid tissue (Figs. 1,2). Cross striations were demonstrable even without resorting to special stains (Fig. 3). Mitotic activity and cytological atypia of the stromal tissue was consistent with the malignant nature of the connective tissue.

Immunohistochemistry was performed using antibodies to cytokeratin (CK) and epithelial membrane antigen (EMA) as markers of epithelial differentiation. Mesenchymal markers used were vimentin, desmin and S-100. The stroma showed diffuse vimentin positivity with focal desmin positivity and was S-100 negative. The epithelial elements stained with CK but not with EMA.

Discussion

Sinonasal neoplasm with histological features of teratoma and carinosarcoma are unique and extremely rare clinicopathological entities [1-4]. We reviewed the literature on the topic and found that the majority of the patients present with the complaints of nasal obstruction with or without episodes of epistaxis, nasal

Fig. 1 : Tumour showing poorly differentiated epithelial cells having glandular or cribriform patterns and adjacent myogenous appearing spindle cell sarcomatous stroma (H & E, 10 x)

^{*} Associate Professor, ⁺ Professor and Head, Dept of Pathology, Armed Forces Medical College, Pune - 40, [#] Classified Specialist (Pathology), MH (CTC), Pune - 40

Fig. 2 : High power view showing edge of neoplastic granular structure and adjacent sarcomatous stroma showing rhabdomyoblastic differentiation (H&E, 40 x)

discharge, headache, facial or dental pain. Occasionally nasal deformity and proptosis due to the growing tumour mass in the nasal cavity are reported. Patients are predominately male in the age group between 20-40 years (mean 60 years) with no racial predilection. The tumour frequently originates from nasal cavity, ethmoid or other paranasal sinuses. It rapidly grows with extensive areas of local destruction of bone and the surrounding soft tissue which are the prominent features of the tumour. Shanmugaratnam et al [1], postulated that tumour has its origin from sequestered primitive embryonic tissue or pluripotential cells in the sinonasal tract. Heffener and Hyams [4] suggested that the nasal part of septum has ectodermal origin capable of multipotential differentiation and the other mesenchymal elements may be contributed by the lower part of the membrane. Olfactory nerve may contribute to the neural element. Meinecke et al [5] considered that teratoid tumours of upper respiratory tract are akin to blastoma of lungs and called it nasopharyngeal blastoma which is endodermal in origin. According to Chaudhary and coworkers [6], these tumours are developmental malformations derived from totipotent cells from ectoderm and mesoderm which proliferate and differentiate into a disorganised mass.

Heffener and Hyams selected 20 cases of sinonasal tumours from registry of Otolaryngic pathology at Armed Forces Institute of Pathology from 1970 to 1981 reported by various authors as malignant teratoma, blastoma, teratocarcinoma, carcinosarcoma and mixed mesenchymal tumours etc. These tumours showed various histological patterns having combina-

Fig. 3 : Spindled rhabdomyoblasts in the sarcomatous area showing cross striations (60 x)

tion of epithelial and mesenchymal components with immature elements. They justified this designation of TCS over other terms like teratocarcinoma which is used for testicular tumours having teratoma and embryonal carcinoma, as the sinonasal tumours have predominantly sarcomatous elements. Carcinosarcoma, a mixture of carcinoma and sarcoma does not indicate the teratoid element [4].

TCS is a clearly malignant neoplasm with 60% of the patients not surviving beyond 3 years (average survival 1.7 years). Aggressive therapy is advocated since 40% of the patients survive beyond 3 years with surgery combined with irradiation [4].

REFERENCES

1. Shanmugaratnam K, Kunaratanam N, Chia KB, Chiang GS, Sinniah R. Teratoid carcinosarcoma of the paranasal sinuses. *Pathology (Australia)* 1983;15: 413-9.
2. Redondo Martinez E, Rey Lopez A, Reguera Parra V, Bolanos rodriguez C. Servicio de Anatomia Patologica, Hospital Insular. Teratocarcinosarcoma Sinusal. *Acta Otorrinolaringol Esp (Spain)* 1991;43:363-7.
3. Shindo ML, Stanley RB Jr, Kiyabu MT. Carcinosarcoma of the nasal cavity and paranasal sinuses. *Head Neck (United States)* 1990;12:516-9.
4. Heffener DK, Hyams VJ. Teratocarcinosarcoma (Malignant teratoma) of nasal cavity and paranasal sinuses. A clinicopathological study of 20 cases. *Cancer* 1984; 53: 2140-54.
5. Meinecke R, Bauer F, Skouras J, Mottu F. Blastomatous tumours of respiratory tract. *Cancer* 1976;38:818-23.
6. Chaudhary AP, Lore JM, Fisher JE, Gambrino AG. So called hairy polyps or teratoid tumours of the nasopharynx. *Arch otolaryngol* 1978;104:517-25.