ORIGINAL ARTICLE

Clinical characteristics of pleomorphic adenoma of salivary glands among Jordanian patients

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Abstract

Objective: To evaluate the incidence of salivary gland pleomorphic adenoma in Jordanian patients.

Methods: The retrospective study involved histopathological reports of 62 patients diagnosed to have pleomorphic adenoma from salivary glands between 2000 and 2008 at King Hussein Medical Centre and the peripheral military hospitals of the Royal Medical Services, Jordan.

The files were evaluated. Special attention was given to the distribution of the tumour to major and minor categories. Age, gender and treatment pattern were also noted. Quantitative and categorical variables were worked out for statistical analysis.

Results: Out of the 62 cases, 32 (51.6%) occurred in men, with a male-to-female ratio of 1.06:1. The mean age was 40.4±12 years (range: 8 to 80 years) with peak incidence in the 4th decade of life. The primary tumours were predominantly located in the parotid gland (n=40; 64%), followed by pleomorphic adenoma of the minor salivary glands (n=11; 17%), the submandibular gland (n=10; 16.12%) and the sublingual gland (n=1; 1.6%). Painless swelling was the first finding in 49 (79%), followed by pressure sensation in 10 (16%) and pain in 3 (5%) patients.

Conclusion: Pleomorphic adenoma of salivary glands had similar characteristics with patients of most previously published research studies in other countries except that there was no significant difference regarding gender distribution in Jordanian patients.

Keywords: Pleomorphic adenoma, Minor and major salivary glands. (JPMA 63: 358; 2013)

Introduction

Salivary gland tumours are rare, comprising less than 3% of all neoplasms of the head and neck region[1] and are known by their complex microscopical features. Also known as benign mixed tumour, it is the most common salivary gland neoplasm and accounts for 60% of all benign salivary gland tumours.[2,3] It most commonly presents in the middle age and is most common in women.[4] Although it occurs most commonly in the major salivary glands, it may also occur in the minor salivary glands and the extra-salivary tissue.

Histologically, pleomorphic adenomas are seen to have a mixed cell origin with epithelial, mesenchymal and myoepithelial components.[5,6] An incomplete connective tissue pseudo-capsule may be seen to envelop the lesion with isolated nodules of tumour lying within and outside it. Because of these nodules and the possibility of rupture of the capsule at operation, recurrence may occur.[7] Excision of the lesion with a cuff of surrounding normal tissue is recommended to prevent any future recurrence.

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The aim of the current study was to review the records of patients and to evaluate the clinical characteristics of this tumour among Jordanian patients.

Materials and methods

The retrospective analysis comprised reviewing files and histopathological reports of 62 patients diagnosed with pleomorphic adenoma from salivary glands between 2000 and 2008 and were treated at King Hussein Medical Centre as well as peripheral military hospitals of the Royal Medical Services, Jordan. Special attention was paid to the distribution of the tumour to major and minor categories, as well as in terms of age, gender and the treatment received.

Histopathologically, these tumours exhibited the full range of histologic appearances with varied proportions of epithelial, myoepithelial, myxoid and pseudo cartilaginous elements.

The tumours were classified according to the World Health Organization's histologic typing of salivary gland tumours.

The data was analysed by calculating for quantitative variables. Chi-square test was performed to assess association between categorical variables.

Results

During the 8-year period, a total of 127 salivary gland tumours were diagnosed and treated. Of these, 62 (48.8%) were pleomorphic adenomas.

There was no significant difference regarding gender distribution, as out of the 62 cases, 32 (51.6%) occurred in men, with a male-to-female ratio of 1.06:1.

The mean age was 40.4±12 years (range: 8 to 80 years) with a peak incidence in the 4th decade of life.

The pleomorphic adenomas in this study were predominantly located in the parotid gland (n=40; 64%); followed by pleomorphic adenoma of the minor salivary glands (n=11; 17.7%); the submandibular gland (n=10; 16.1%); and the sublingual gland (n=1; 1.6%).

The distribution of pleomorphic adenoma in the minor salivary glands was as follows: palate (n=8; 72.7%); lips (n=2; 18.2%), and primarily the nose (n=1; 9.1%).

Solitary, painless, slow-growing, well-circumscribed parotid or pre-auricular lump with laterality of tumour growth was conspicuous for parotid gland tumours; the right side being affected in 29 (72.5%) individuals and only 11 (27.5%) patients with left-sided pleomorphic adenoma.

Painless swelling was the first finding in 49 (79%) patients, followed by pressure sensation in 10 (16%) and pain in 3 (5%). The duration of the tumour at the time of treatment was between 10 months and 36 months with an average of 18±7 months. Malignant transformation of pleomorphic adenoma was not seen in any case. Likewise, a pre-operative malfunction of the facial nerve caused by the tumour was not observed.

Treatment was by local enucleation, superficial parotidectomy and total submandibular gland excision. Post-surgical complications included infection and partial damage to some branches of the facial nerve.

Procedures were performed by general surgeons, ear, nose and throat (ENT) surgeons, maxillofacial surgeons and by plastic surgeons.

The majority of the patients were lost to follow-up within 2 years after the surgery, and, as such, it was not possible to study the recurrence rate.

Discussion

Pleomorphic adenoma remains one of the most interesting benign tumours encountered in the head and neck surgery. It is a slow-growing, benign, salivary gland tumour, most commonly arising in the parotid gland. It accounts for 60% to 73% of the parotid gland tumours, 12% to 60% of the submandibular and 14% to 70% of the minor salivary glands tumours.[3,4,8-10] The results of the current study were in agreement with literature.[3,4,8-10]

Out of 62 cases, 32 (51.6%) occurred in men, with a peak incidence in the 4th decade of life. This was similar to another study conducted in Jordan.[11] In contrast, most studies have shown that females are more affected than males and the peak incidence occurs in the fourth and fifth decades.[12-16]

Although pleomorphic adenoma is considered a painless tumour,[17] we observed in our study that the painful symptoms, although uncommon, was the third major complaint of people with this cancer, constituting 5% of reported complaints. However, data on the history and clinical examination of patients in the medical records were scarce, hindering a more thorough analysis of the clinical characteristics of the tumour.

The lack of pre-operative facial nerve palsies in our patients strengthens the value of this symptom as an indication of malignant changes, and also shows the considerable mechanical tolerance of the facial nerve to elongation.

Surgical excision is the treatment of choice for pleomorphic adenoma, which can grow to giant proportions if left untreated. Longevity and recurrence are risk factors for malignant transformation which occurs if not excised.

The aim of surgery is to completely remove the tumour without risking recurrence or spillage. In the present study, local enucleation was mainly done in palatal tumours. All tumours occurred in the superficial lobe of the parotid gland; treatment was thus subtotal parotidectomy with preservation of the facial nerve. Total submandibular gland excision was undertaken for all tumours that involved the submandibular glands.

Pleomorphic adenoma can give rise to malignant tumours, in particular carcinoma,[18] both in minor[19] and major[20] salivary glands. It can occur in long-standing pleomorphic adenoma.[21] Furthermore, the risk of malignant transformation is thought to be increased in recurrent cases.[21] However, malignant transformation did not occurr in any of our patients.

Conclusion

Pleomorphic adenoma of salivary glands were found to

have similar characteristics with patients of most previously published research studies in other countries except for the fact that there was no significant difference regarding gender distribution in Jordanian patients.

References

1. Forty MJ, Wake MJ. Pleomorphic salivary adenoma in an adolescent. Br Dent J 2000; 188: 545-6.
2. Subhashraj K. Salivary gland tumours: a single institution experience in India. Br J Oral Maxillofac Surg 2008; 46: 635-8.
3. Paris J, Facon F, Chrestian MA, Giovanni A, Zanaret M. Pleomorphic adenoma of the parotid: histopathologic study. Ann Otolaryngol Chir Cervicofac 2004; 121: 161-6.
4. Ito FA, Ito K, Vargas PA, De Almeida OP, Lopes MA. Salivary gland tumours in a Brazilian population: a retrospective study of 496 cases. Int J Oral Maxillofac Surg 2005; 34: 533-6.
5. Ito FA, Jorge J, Vargas PA, Lopes MA. Histopathological findings of pleomorphic adenomas of the salivary glands. Med Oral Patol Oral Cir Bucal 2009; 14: 57-61.
6. Zbären P, Stauffer E. Pleomorphic adenoma of the parotid gland: histopathologic analysis of the capsular characteristics of 218 tumours. Head Neck 2007; 29: 751-7.
7. Witt RL. The significance of the margin in parotid surgery for pleomorphic adenoma. Laryngoscope 2002; 112: 2141-54.
8. Luukkaa H, Klemi P, Leivo I, Koivonen P, Larome J, Makitic A, et al. Salivary gland cancer in Finland 1991--96: An evaluation of 237 cases. Acta Otolaryngol 2005; 125: 207-14.
9. Kolude B, Lawoyin JO, Akang EE. Salivary gland neoplasms: a 21year review of cases seen at University College Hospital, Ibadan. Afr J Med Med Sci 2001; 30: 95-8.
10. Junquera L, Alonso D, Sampedro A, Fresno F, Albertos JM, Lopez Arronz JS. Pleomorphic adenoma of the salivary glands: prospective clinicopathologic and flow cytometric study. Head Neck 1999; 21: 652-6.
11. Ma'aita J, Al-Kaisi N, Al-Tamimi S, Wraikat A. Salivary gland tumours in Jordan: A retrospective study of 221 patients. Croat Med J 1999; 40: 539-42.
12. Ayoub OM, Bhatia K, Mal RK. Pleomorphic adenoma of the parotid gland: is long-term follow-up needed?. Auris Nasus Larynx 2002; 29: 283-5.
13. Lingam RK, Daghir AA, Nigar E, et al. Pleomorphic adenoma (benign mixed tumour) of the salivary glands: its diverse clinical, radiological, and histopathological presentation. Br J Oral Maxillofac Surg 2009. [Epub ahead of print].
14. Chidzonga MM, Lopez Perez VM, Portilla Alvarez AL. Pleomorphic adenoma of the salivary glands. Clinicopathologic study of 206 cases in Zimbabwe. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 1995; 79: 747-9.
15. Ledesma-Montes C, Garces-Ortiz M. Salivary gland tumours in a Mexican sample. A retrospective study. Med Oral 2002; 7: 324-30.
16. Takahama A Jr, Da Cruz Perez DE, Magrin J, De Almeida OP, Kowalski LP. Giant pleomorphic adenoma of the parotid gland. Med Oral Patol Oral Cir Bucal 2008; 13: E58-60.
17. Rios PC. et al. Parapharingeal parotid pleomorphic adenoma. Rev Port Orl 2000; 38: 57-9.
18. Batsakis JG: Recurrent mixed tumours. Ann Otol Rhinol Laryngol 1986; 95: 543-4.
19. Freeman SR, Sloan P, de Carpentier J. Carcinoma ex pleomorphic adenoma of the nasal septum with adenoid cystic and squamous carcinomatous differentiation. Rhinology 2003; 41: 118-21.
20. To EW, Tsang WM, Tse GM. Mucoepidermoid carcinoma ex pleomorphic adenoma of the submandibular gland. Am J Otolaryngol 2003; 24: 253-7.
21. Rowley H, Murphy M, Smyth D, O'Dwyer TP. Recurrent pleomorphic adenoma: uninodular versus multinodular disease. Ir J Med Sci 2000; 169: 201-3.