PLEOMORPHIC ADENOMA PAROTID GLAND: OUT COME OF SUPERFICIAL PAROTIDECTOMY

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ABSTRACT

Background: Eighty percent of parotid gland tumors are benign and occur in the lower part of the gland. The recurrence rate of pleomorphic adenoma removed by superficial parotidectomy reported in literature is 2%. The objective of the present study is to present the out-come of superficial parotidectomy in the management of pleomorphic adenoma arising from superficial lobe of parotid gland in terms of recurrence and complications.

Material & Methods: This descriptive study was carried out from June 2007 to December 2012 at departments of ENT B Unit Hayat Abad Medical Complex, Peshawar and Mufti Mehmood Memorial Teaching Hospital Dera Ismail Khan. All confirmed cases of pleomorphic adenoma arising from superficial lobe of parotid gland of either sex and of any age were included in the study. Superficial parotidectomy was done in all patients for excision of pleomorphic adenoma. Data collected included patient's age, gender, and history of previous surgery, recurrence of the disease and complications of the surgery. Statistical analysis was done using SPSS version 17.

Results: Out of 32 pleomorphic adenoma patients, 19(68%) were female and 13 (32%) male. Mean age of the patients was 15.13±14.59 years. Recurrence rate after the superficial parotidectomy was 2 (6.25%). Temporary facial palsy was observed in 3 (09.35%) patients. In 2 (06.25%) cases disease reoccurred within 6 months after removal.

Conclusion: Recurrence of pleomorphic adenomas arising from superficial lobe of parotid gland remains low when the superficial parotidectomy procedure is employed.

Key words: Salivary gland tumors, Pleomorphic adenomas, Superficial parotidectomy.

INTRODUCTION

Parotid gland tumors constitute 80% tumors of the salivary glands and represent 3% of head and neck tumors. Eighty percent of parotid gland tumors are benign and occur in the lower part of the gland and 90% of parotid neoplasms present in the superficial lobe.2 Pleomorphic adenoma is the most common tumor of the parotid gland. It derives its name from the architectural pleomorphism (variable appearance) seen by light microscopy. It is also known as "Mixed tumor, salivary gland type", which describes its pleomorphic appearance as opposed to its dual origin from epithelial and myoepithelial elements.

Parotid gland pleomorphic adenoma can be diagnosed both by tissue sampling as well as radiographic studies. Fine needle aspiration biopsy (FNA), operated in experienced hands, can determine whether the tumor is malignant in nature with sensitivity around 90%.[1,2] FNA can also distinguish primary salivary tumor from metastatic disease as well. Ultrasound can determine and characterize superficial parotid tumors. Certain types of salivary gland tumors have certain sonographic characteristics on ultrasound.[4] Ultrasound is also frequently used to guide FNA. CT allows direct, bilateral visualization of the salivary gland tumor and provides information about overall dimension and tissue invasion. CT is excellent for demonstrating bony invasion. MRI provides superior soft tissue delineation such as perineural invasion when compared to CT only.[5] Generally benign tumors of the parotid gland are treated with superficial or total parotidectomy with the latter being the more commonly practiced due to high incidence of recurrence.

The objective of the present study is to present the out-come of superficial parotidectomy in the management of pleomorphic adenoma arising from superficial lobe of parotid gland in terms of recurrence and complications.

MATERIAL AND METHODS

This descriptive study was carried out from June 2007 to December 2012 at departments of ENT B Unit Hayat Abad Medical Complex, Peshawar and Mufti Mehmood Memorial Teaching Hospital Dera Ismail

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Khan. The study was approved by the Ethics and Research Committee of the hospital. All confirmed cases of pleomorphic adenoma arising from superficial lobe of parotid gland of either sex and of any age were included in the study. Pleomorphic adenomas arising from deep lobe of the gland were excluded from the study. All subjects were admitted a day before surgery. A written informed consent was obtained from each patient that participated in the study. A detailed history and physical examination were carried out. History of previous surgery was also obtained. Each swelling was examined for site and side of location, consistency, fluctuation and trans-illumination. Status of the facial nerve and scar of previous surgery was also documented. Ultrasanography and FNAC were done in all cases to confirm the diagnosis of pleomorphic adenoma.

Superficial parotidectomy was done in all patients for excision of pleomorphic adenoma under general anesthesia in which modified Blair incision was used. The preauricular incision was made in the preauricular crease. The skin flap was raised to the superior, anterior and inferior borders of the gland. After identifying the facial nerve, dissection proceeded using fine-tipped hemostats to create tunnels in the parotid tissue immediately above the nerve. The parotid was displaced upwards and downwards, and hence, avoiding too deep and narrow tunneling. Great care was exercised to avoid inadvertent entry into the tumor during preservation of the facial nerve. The gland was resected at the posterior border. The superficial lobe of parotid was excised with the tumor 'en bloc'.

The parotid duct was resected by the traditional technique of superficial parotidectomy. The wound was irrigated with saline and the integrity of the facial nerve was checked. Closed suction drainage was achieved placing suction tube away from the dissected facial nerve to prevent damage to the nerve. The skin flap was replaced; the platysma muscle and subcutaneous tissues were closed with absorbable sutures. Finally, the skin incision was closed using non-absorbable sutures. The sutures were removed one week after operation.

Prophylactic antibiotics were given to all patients for one week postoperatively. Follow-up was done for 6 months on every two months basis. On every follow up visit, each patient was examined for any recurrent visible or palpable swelling. Two patients, who had recurrence, were re-operated on six months later.

Data collected included patient's age, gender, and history of previous surgery and recurrence of the disease. Follow up was done for 6 months to see for any recurrence.

Gender and age in years and age grouping were demographic variables. Recurrence of disease and complications arising due to superficial parotidectomy were research variables. Age in years was analyzed as mean and range. Gender, age grouping, recurrence of disease and complications of superficial parotidectomy were analyzed as frequency (number) and relative frequency (%). Statistical analysis was done using SPSS version 17.

RESULTS

Out of 32 pleomorphic adenoma patients, 19(68%) were female and 13 (32%) male with female-to-male ratio of 1.2:1. Mean age of the patients' was 15.13±14.59 years. Most of the pleomorphic adenomas 20 (62.50%) were involving the right parotid gland.

Table: VARIOUS CHARACTERISTICS OF PATIENTS WITH PLEUMORPHIC ADENOMA (n=32)

CHARACTERISTICS	FREQUENCY AND RELATIVE FREQUENCY	MEAN/RATIO
Gender		
Male	13 (40.60%)	Male to female ratio = 3: 1
Female	19 (59.40%)	
Age Ranges (in years)		
10 – 20 years	03 (09.35%)	Mean age = 28.5 + 14.59
21 – 30 years	04 (12.50%)	
30 – 40 years	11 (34.35%)	
41 – 50 years	08 (25.35%)	
51 – 60 years	05 (15.60%)	
61- -70 years	01 (03.15%)	
Laterality		
Right side	20 (62.50%)	
Left side	12 (37.50%)	
History of previous surgery	03 (09.35%)	
Complications		
Hematoma	01 (03.15%)	
Wound infection	02 (06.25%)	
Facial nerve palsy (partial type)	03 (09.35%)	
Hypoesthesia of greater auricular nerve	08 (25.35%	
Recurrence rate after surgery	02 (06.25%)	

Recurrence rate after the superficial parotidectomy was 2 (6.25%). Three patients gave a positive history of surgery in the past for the same disease. Temporary facial palsy was observed in about 3 (09.35%) patients. In 2 (06.25%) cases disease reoccurred within 6 months after removal.

DISCUSSION

Pleomorphic adenoma is still the commonest

cause of benign lesions. Most commonly, they present in the first decade of life, however they are also seen in adults as well.[6] The age range of our patients is almost similar to that reported in literature.[7]. On the other hand all of the patients were from adult group in another study.[1] In agreement with our results Al Salamah and his colleagues have reported a right sided involvement more commonly than the left sided tumors. [7]

In our study, females were more commonly affected than males. These results are in agreement with the literature reports.[7,8] But contrary to these reports, more than half of the patients were male as reported in other studies.[10-11] No sex predilection has been reported in another study.[12] These differences in gender distribution may be attributed to genetic and geographic differences.

The incidence of various complications due to superficial parotidectomy in descending order of frequency were hypoesthesia along the distribution of great auricular nerve, partial paralysis of facial nerve, wound infection and hematoma formation as supported by findings of the other studies.[6,14] Hemorrhage or hematoma after parotidectomy is uncommon and usually related to inadequate haemostasis at the time of the surgical procedure. Treatment consists in evacuation of the hematoma and controlling the bleeding sites. Infection is rare following parotidectomy and is avoided by using an aseptic technique and antibiotic prophylaxis. Treatment of infection consists of drainage and wide spectrum antibiotics.

Post-operative facial nerve dysfunction involving some or all of the branches of the nerve is the most frequent early complication of parotid gland surgery. Temporary facial nerve paresis, involving all or just one or two branches of the facial nerve, and permanent total paralysis have occurred, respectively, in 9.3% to 64.6% and in 0% to 8% of parotidectomies, reported in the literature. The incidence of temporary facial palsy in our study was about 10% which is almost similar to results of the other studies.3,6,13 The marginal mandibular nerve was the most frequently involved branch of the facial nerve because of its close proximity to the tail and inferoposterior part of the parotid gland. Older patients appear to be more susceptible to facial nerve injury. The cases of transient facial nerve paresis generally resolved within 6 months, with 90% within 1 month.2–7 Temporary pareses usually resolves within the 18th post-operative month. 2 The incidence of facial nerve paralysis is related to stretch injury or as result of surgical interference with the vasa nervosa. Revision parotidectomy or parotidectomies for parotid fistula are generally associated with a higher incidence of facial weakness. Temporary facial nerve weakness is a cosmetic problem, and patients should be told their appearance will return to normal.

Permanent facial nerve palsy was not seen in our series undergoing superficial parotidectomy. The incidence of permanent facial nerve damage reported in literature is from 9 to 64%.[13,14] Facial nerve monitors and stimulators were not available in our set up which of course has paramount role in avoiding damage to the nerve. Only to act as a guide, thorough knowledge of facial nerve anatomy is very important in identifying the facial nerve trunk.

Hypoesthesia of the greater auricular nerve is a frequent complaint reported by the patients after parotidectomy. Preoperatively all the patients should be told that they will feel numbness around the ear, especially at the lobule and numbness will improve within one year of the operation but a small area of skin may remain anaesthetized. Some Authors recommend preservation of the posterior branches of the greater auricular nerve to achieve faster and more complete recovery in sensory function.[8]

The recurrence rate of pleomorphic adenoma after superficial parotidectomy in this study was 6%. Recurrence rates reported in the literature vary but rates of less than two percent were reported in many larger series.[4] Surgery for recurrent pleomorphic adenoma of the parotid gland is technically difficult and once a tumor has recurred, the risk of further disease increases to 15%.[14] Both patients related and surgeon related factors may be responsible for recurrence. Patient or tumor related factors may include skin involvement by the tumor, previous surgical intervention and lobulation of the tumor. While surgeon related factors include, perforation or breach of the capsule of the tumor at the time of excision and inadequate removal of the tumor. In cases of incomplete surgical resection post-operative radiotherapy is suggested to prevent recurrence.[17]

The present study is limited because of the small study group. A large sized, prospective, randomized and a multi centre study is recommended to study the out come of superficial parotidectomy in the management of pleomorphic adenoma arising from superficial lobe of parotid gland in terms of recurrence and complications.

CONCLUSION:

Recurrence of pleomorphic adenomas arising from superficial lobe of parotid gland remains low when the superficial parotidectomy procedure is employed. Facial nerve paralysis occurring after superficial parotidectomy is usually partial and transient in nature.

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