CASE REPORT

Myopericytoma of the parotid region treated by extracapsular dissection

Anthony Simon Bates,1 Paul Craig,2 Greg J Knepil3

1University of Bristol, Bristol, UK
2Department of Cellular Pathology, Gloucestershire Hospitals NHS Foundation Trust, Cheltenham, UK
3Department of Oral and Maxillofacial Surgery, Gloucestershire Hospitals NHS Foundation Trust, Gloucester, UK

Correspondence to Anthony Simon Bates, anthony.simon.bates@gmail.com

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SUMMARY

Myopericytoma (MPC) is a vascular neoplasm exhibiting differentiation towards perivascular cells. Variable cytoarchitectural features are visible within MPC, and there is much overlap between MPC, myofibroma and glomus tumours. MPC have a local recurrence rate of 10–20% and malignancy has been described in a few published cases. Previously, superficial parotidectomy has been recommended for MPC but, in this case, the surgical approach was via extracapsular dissection (ECD). A 66-year-old Caucasian man presented with a palpable mass arising from the superficial lobe of the right parotid gland. Following removal by ECD, the histopathological diagnosis of MPC was made. This is the first published report describing ECD of MPC associated with the parotid gland. ECD is preferable to superficial parotidectomy for small superficial lesions such as MPC, with similar oncological outcomes and fewer functional and aesthetic complications.

BACKGROUND

This case highlights a rare parotid pathology, details the difficulty of obtaining a preoperative diagnosis of benign parotid neoplasia, the subsequent surgical management options and reconstructive techniques best placed to excise this rare benign parotid tumour.

CASE PRESENTATION

A 66-year-old Caucasian man was referred by his general medical practitioner to the Department of Maxillofacial Surgery with a painless slow-growing mass on his right cheek, which had been noticeable to the patient for 12 months. The patient had a 20 pack-year history of cigarette use and reported consuming 10–14 units of alcohol per week. There were no obvious relevant infective, inflammatory, autoimmune, traumatic or radiation-induced predisposing factors to parotid pathology. Physical examination of the right parotid region revealed a subcutaneous lump. Ultrasonography of the right parotid gland was then undertaken, which demonstrated a 12×7 mm well-defined lesion permitting internal echoes.

INVESTIGATIONS

The patient declined Trucut or fine needle aspiration cytology (FNAC), so excisional biopsy of the lesion was performed by the extracapsular dissection technique (ECD). At the time of surgery, a skin flap was raised over the parotid gland region through a modified facelift incision and the lesion was found to arise from within the superficial parotid gland, deep to the parotid fascia (figure 1). Following excision, the lesion appeared rubbery in consistency and grey-tan in colour. The patient was discharged on the same day of surgery without complication.

Histological examination revealed a well-circumscribed nodule 9 mm in diameter, within 1 mm of normal parotid gland parenchyma (figure 2), partly surrounded by adipose and skeletal muscle tissue. It showed typical morphology of myopericytoma, with myoid oval to spindle-shaped cells with a concentric perivascular pattern of growth and expression of smooth muscle actin (figure 3) and h-caldesmon in a pericytic pattern. Features of malignant transformation were not apparent. Normal parotid tissue is shown in figure 4.

Figure 1 Intraoperative photograph of parotid tumour for illustrative purposes from a similar case. The inner circle is the tumour and the outer circle is the margin. Reproduced with permission.

Figure 2 A well circumscribed 9 mm diameter myopericytoma (on the right) is seen within 1 mm of the normal parotid gland (on the left). Magnification ×20.
myopericytoma arising from the parotid gland have been reported worldwide.1–10 Histologically, numerous cytoarchitectural features are visible within myopericytoma, with much overlap between myopericytoma, myofibroma and the glomus tumour spectrum.1–3 Immunohistochemistry can be helpful in differentiating between these entities and, although glomangiopericytoma and glomangiomyoma may show a similar pattern of immunohistochemical markers, glomus tumours do not exhibit the typical concentric whorled growth pattern of myopericytoma.1–3

There are four previous published case reports of myopericytoma of the parotidomasseteric region, all of which were treated by wide clearance with facial nerve preservation or superficial parotidectomy.1–12 In our case, ECD of the parotid was conducted to minimise complications associated with superficial parotidectomy such as facial nerve paralysis, facial hollowing, sialocele formation, division of the greater auricular nerve and Frey’s syndrome.10–12 Also known as ‘local dissection’, ECD was established by Gleave et al.11 This technique involves intraoperative management of the facial nerve, en bloc tumour resection and preservation of the parotid capsule and is performed in a bloodless field.12 13 The technique has since been advocated by McGurk et al.14 When ECD is successfully performed, rates of local recurrence, retromandibular hollowing and facial nerve injury are reduced.12 13 It should be noted, however, that, if performed incorrectly, ECD may relapse into enucleation of the tumour which should be avoided.12 13

It is possible to differentiate between malignant and benign neoplasm through clinical examination in 93–96% of cases when the initial skin flap over the parotid is reflected.12 Fixation of the neoplasm to deeper or adjacent structures is indicative of a malignant tumour and should guide the surgeon in converting an ECD to a formal superficial parotidectomy. Should a small ambiguous lump be encountered, surgical caution is advised, with reasonable excision margins suggested in case of malignant cell type. Often, if a suitable margin is taken around a suspicious small neoplasm, no further surgical treatment is required.13–15 Notably, FNAC of the parotid has been shown to provide low sensitivity when differentiating between benign and malignant disease of the parotid,16 and therefore malignant disease cannot be ruled out. In the UK the sensitivity of FNAC in differentiating between malignant and benign parotid disease was reported as 38% (95% CI 13% to 63%) in a district general hospital and 79% (95% CI 61% to 97%) in a university teaching hospital.16 There is ongoing discussion in the head and neck community regarding the utility of FNAC in parotid tumours, with many groups now suggesting that other diagnostic techniques such as therapeutic ECD and mini Trucut biopsy (ultrasound-guided small gauge core needle biopsy) are superior.17–19 Mini Trucut

Figure 3 Smooth muscle actin highlights the vascular smooth muscle cells forming the larger vascular structures but not the intervening ovoid pericytic cells. Magnification ×150.

DIFFERENTIAL DIAGNOSIS
The differential diagnosis of parotid lesions includes common benign parotid neoplasia such as pleomorphic adenoma, which account for 65% of benign tumours, and adenolymphoma (Warthin’s tumour), which form around 25% of benign histological diagnoses. Rarer adenomas such as basal cell adenoma and oncocytomas are less common (5%) but could not be excluded before histological analysis. Approximately 10% of parotid tumours are malignant.1–3

TREATMENT
The right parotid gland was removed by ECD.

OUTCOME AND FOLLOW-UP
ECD is an oncologically acceptable procedure and provides improved functional and facial aesthetic outcomes for parotid neoplasms compared with superficial parotidectomy. In this case its use allowed definitive biopsy and therapeutic excision of a benign neoplasm of the right parotid salivary gland without recurrence after 18 months of follow-up.

DISCUSSION
The term ‘myopericytoma’ was suggested by Requena et al1 in 1996 and, in 1998, perivascular myoid differentiation was further suggested by Granter et al,2 describing myopericytoma as a structurally heterogeneous neoplasm “displaying a histological continuum of perivascular myoid features of differentiation”. In 2002 the World Health Organization officialised the term ‘myopericytoma’ for use in clinical diagnoses. Myopericytoma is relatively rare and it is therefore difficult to provide a rapid diagnosis.4 5 Recurrence is uncommon, and multifocality has been documented in only two cases.3 4 Malignant transformation of myopericytoma is infrequent and directly correlates with lesion depth.1

Six percent of head and neck tumours arise from the salivary glands and 80% of those are thought to arise from the parotid gland. Malignancy is equally distributed between sexes, although women are more likely to be affected by malignant growths over the age of 40 years.6 Myopericytoma of the parotid gland should be considered as exceedingly rare. To date, in the English language literature only four published cases of myopericytoma arising from the parotid gland have been reported worldwide.1–10

Figure 4 Normal parotid glandular tissue. Magnification ×120.
biopsy uses a needle tip of the same diameter as that used for FNAc (14–18 gauge). In our case, the diagnosis of benign pathology was made clinically before surgical intervention, with postoperative tissue typing confirming the cytoarchitectural features of myopericytoma.

A recent published series of 176 ECDs was compared with a series of 56 superficial parotidectomies in Naples, Italy. The authors reported fewer postoperative complications (facial nerve injury, transient facial paralysis and Frey’s syndrome) following ECD, which reached statistical significance. The authors concluded that ECD should be considered the treatment of choice for tumours arising from the superficial lobe of the parotid gland. Furthermore, a meta-analysis of ECD versus superficial parotidectomy in 1882 patients showed no difference in oncological recurrence of resected benign neoplasia between individuals pooled into groups according to the procedure undertaken. Permanent facial nerve paralysis also did not differ between groups, but Frey’s syndrome and transient paresis were significantly reduced in the pooled ECD group. In a series of 377 patients undergoing ECD, reported complications included hypesthesia of the cheek and earlobe (10%), seroma (5%), haematoma (3%) and salivary fistula formation (2%). Bleeding was reported in 0.8% of cases. Another series of 27 patients undergoing ECD had even fewer complications with a single case of salirole documented.

The ECD method of excision avoids the need to extensively dissect parotid tissue adjacent to the facial nerve beyond the parts of the nerve that lie close to the tumour. In patients undergoing ECD the hospital stay is usually shortened to 24 h and the procedure can often be performed as a day case. ECD allows the use of a modified facelift incision which runs down the tragal crest and behind the ear and avoids division of the greater auricular nerve. This is more parre with superficial parotidectomy. Healthy tissue is minimised, which allows re-approximation of the parotid fascia over pre-existing contours, thus maintaining a symmetrical facial appearance resulting in a superior aesthetic result compared with superficial parotidectomy. Spillage or rupture of the tumour, which can result in oncological seeding, may be avoided by excising the tumour with an adequate margin of healthy tissue. ECD is minimally invasive and, given an appropriate case load to maintain this skill, provides the surgeon with an optimal approach to suspected benign superficial parotid neoplasia. It should yield clinically superior and aesthetically pleasing results compared with superficial parotidectomy, with similar oncological outcomes.

Contributors ASB wrote the report and performed a literature search. PC diagnosed myopericytoma, provided secondary sources of literature and reviewed draft editions. GIK performed the surgical excision and edited the manuscript.

Competing interests None.

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REFERENCES
