

BENIGN TUMORS

Pleomorphic Adenomas

The PA is the commonest benign salivary gland tumor and the commonest salivary tumor overall, although it is comparatively rare in young children. It is slow growing and can reach giant proportions if neglected, and there is a 2–4% malignant change. PAs will recur if the tumor is inadequately removed. Although PAs have a pseudo-capsule of compressed fibrous tissue, the buds and pseudopodia from the tumor involve the capsule so that simple enucleation will leave tumor remnants and lead to multifocal recurrence. The concept of whether the capsule is incomplete and whether pseudopodia of the tumor involves the parotid tissue is currently being questioned, and with it the need for complete superficial parotidectomy. Although parotidectomy is designed to remove PAs with a cuff or margin of normal tissue to prevent recurrence, the tumor's proximity to the facial nerve frequently means that the dissection at some points leaves no tissue around the capsule. In a recent histologic analysis of the capsular form in PAs, 81% showed capsular exposure following parotidectomy or submandibular gland excision (Webb and Eveson 2001) (Figure 8.4f). This paper also showed 57% bosselations, 33% enveloping of the capsule, with 42% microinvasion and 12% "tumor buds" in the capsule; and large >25 mm hypocellular tumors had thinner capsules, possibly easier to rupture at surgery. The article suggested that a minimum of 1 mm of normal tissue around PAs was required as a margin. However, in an article reviewing 475 PAs of the superficial lobe of the parotid, 380 treated by extracapsular dissection and 95 by superficial parotidectomy, there was no difference in recurrence rate or permanent facial nerve palsy (McGurk et al. 1996). These surgeons postulated that tumor buds or micro-invasion into the capsule had little significance and that extracapsular dissection could be done safely. In 1999 a series of 59 partial parotidectomies with selective nerve dissection for benign and low-grade malignant tumors reported a zero incidence of permanent facial nerve paralysis or paresis and zero recurrence (Witt 1999). Although Witt in a later paper confirmed that capsular exposure occurred in virtually all types of parotid surgery, and could find no difference in recurrence, capsular rupture, tumor-facial nerve interface, and permanent facial palsy between total parotidectomy, superficial

parotidectomy, and extracapsular dissection, he recommended against minimum margin resection in extracapsular dissection (Witt 2002). Further evidence for extracapsular dissection is provided by a series of 83 cases in which the overall recurrence rate was 6%, but 17.6% when the tumor itself was at the margins; however, cases with margins of <1 mm had a recurrence of only 1.8% (Ghosh et al. 2003). Ghosh et al. also reported that intraoperative capsular rupture and microscopic invasion of the capsule had no influence on recurrence, suggesting that a fraction of a millimeter of normal tissue was an adequate margin and that only tumors that actually involved the margin were at risk for recurrence. These authors recommend that preservation of vital structures is a more important consideration than preserving a cuff of normal tissue.

In contrast, Piekarski, Nejc, and Szymczak et al. (2004) found a recurrence rate of 8.2% and an unacceptable rate of complications with extracapsular dissection and did not recommend the technique as too "technically demanding." In a separate publication with 213 patients who were operated for pleomorphic adenoma of the parotid, 5 of 9 primary tumors (56%) that recurred were found to have pseudopodia extending outside the capsule on histologic review. This was statistically higher than the examined cases that did not recur (8%), and the authors concluded that pseudopodia extending outside the capsule was a significant risk for recurrence (Henriksson et al. 1998). Interestingly, in the same study only 2 of 28 cases that ruptured during surgical removal recurred (7.1%), which was not significantly different than the 4.1% recurrence rate for the tumors that had no rupture. A further cautionary note is raised by the histologic analysis of Zbaren and Stauffer (2007), in which 160 of 218 (73%) of PAs were found to have adverse capsular characteristics, 33% with an incomplete capsule and 13% with satellite nodules. These were most frequently seen in the stroma rich myxoid subtype. Similar findings with stroma rich PAs showing 71% of focal absence of a capsule and 33% of satellite nodules have been reported with recommendations against local dissection (Stennert et al. 2004.)

It does not appear that extracapsular dissection is just a "euphemism for enucleation" as some have claimed, as recurrence rates are comparable to parotidectomy and most papers show lower morbidity. The exact margin required for complete