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A novel surgical approach for benign deep lobe of parotid gland tumors: Utilizing the Santorini fissure

Conventionally, the "S-shaped" incision has been employed for extracapsular dissection (ECD) of benign deep lobe of parotid gland tumors.[1] While meticulous facial nerve dissection is performed during the surgery, temporary facial paralysis and conspicuous facial scarring remain significant concerns in some patients. To address these limitations, we proposed a novel surgical technique utilizing the Santorini fissure incision for benign deep lobe of parotid gland tumors. Anatomically, the upper part of the parotid sheath was closely associated with the external auditory canal, where fibrous bundles extend into the Santorini fissure. By leveraging this physiologic space, the parotid tissue flap-including the facial nerves-can be elevated to exposed the tumor without direct facial nerve dissection. Furthermore, the incision is strategically designed along pretragal skin wrinkles, ensuring minimal tension and improved aesthetic concealment.

A 55-year-old woman presented with a slowly growing, asymptomatic right parotid mass over two years. Clinical examination revealed a mobile, well-defined tumor in the right parotid gland. The head & neck contrast-enhanced magnetic resonance imaging (MRI) demonstrated a 17 mm × 15 mm well-circumscribed tumor in the deep lobe of parotid gland (Fig. 1A and B).

Following preoperative evaluation, ECD via the Santorini fissure approach was performed. The tumor was exposed by elevating the parotid tissue flap (with intact facial nerves) though the Santorini fissure incision (Fig. 1C–H). Complete tumor excision was achieved without facial nerve dissection. The wound was closed using aesthetic plastic techniques, resulting in minimal skin tension. Postoperatively, the patient exhibited no facial paralysis. Histopathological analysis confirmed pleomorphic adenoma. After six-month follow-up, no recurrence was observed, and the patient was satisfied with the cosmetic outcome.

This technique is indicated for benign deep lobe of parotid gland tumors and offers three key advantages. Firstly, the facial nerve would not be dissected and the facial paralysis would be avoided. Secondly, this new approach could reduce tissue damage by exploiting the Santorini fissure's natural anatomical space compared to the traditional "S-shaped" incision. Finally, this new approach leaves a rather concealed postoperative scar than the traditional "S-shaped" incision. Based on the personalized surgery concept of parotid gland tumor, this technique should be considered for patient with benign deep lobe of parotid gland tumors.[2]

In conclusion, the Santorini fissure method represents a feasible and less invasive alternative to conventional techniques for benign deep lobe of parotid gland tumors, offering reduced complications and enhanced aesthetic outcomes.

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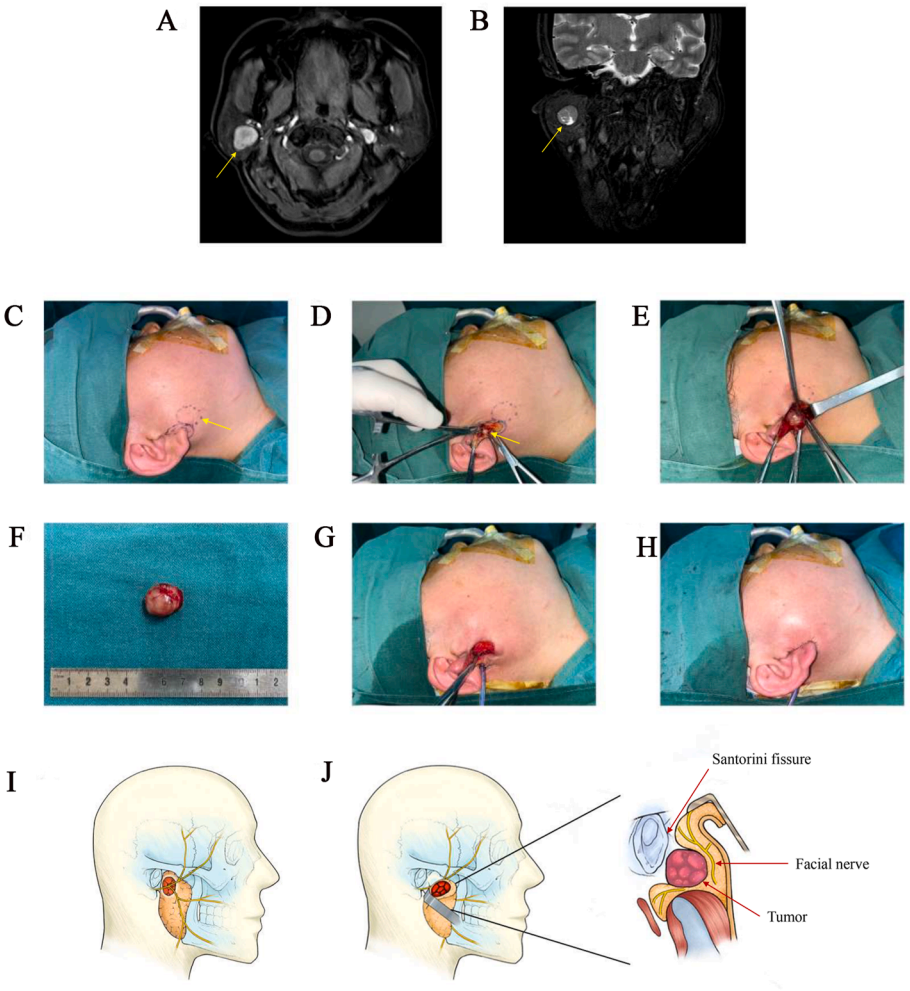

Figure 1 Magnetic resonance imaging (MRI), clinical, and sketched images of the patient. (A) Transverse and (B) coronal contrast-enhanced MRI images showing a well-circumscribed tumor (arrows) in the deep lobe of right parotid gland. (C) Incision design (solid line) and tumor demarcation (dotted line, arrow). (D) Exposure of fiber bundles from the parotid sheath extending into the Santorini fissure (arrow). (E) Tumor exposure via parotid flap elevation. (F) Excised tumor specimen. (G) Parotid flap repositioning. (H) The appearance of the wound immediately after surgery. (I) The tumor was located in the deep lobe of the parotid gland beneath the facial nerves. (J) Tumor exposure via Santorini fissure approach.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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References

1. Yu G, Peng X. Conservative and functional surgery in the treatment of salivary gland tumours. *Int J Oral Sci* 2019;11:22.
2. Lu H, Liu S, Zhu W, Xu W, Yang W. Surgical treatment of benign parotid gland tumors: from functional surgery to personalized surgery. *Oral Oncol* 2025;161:107172.

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