

## Technical note

# New method to prevent salivary fistula after parotidectomy

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Salivary fistulas are a well-known and relatively common complication after parotidectomy. Many can persist for a long time and pose a challenge to the clinician,<sup>1–5</sup> so we describe a new technique we have developed to prevent them.

With the patient under general anaesthesia, we did a partial superficial parotidectomy, in which we resected the tumour (making sure to leave a surrounding 0.5–1 cm cuff of normal parotid tissue), and preserved Stensen's duct. After resection, we lubricated an epidural catheter (Zhejiang Sujia Medical Device Co) with paraffin oil and inserted it into Stensen's duct through the mouth. We diluted methylthioninium chloride (Methylene blue) in a syringe (Shandong Weigao Group Medical Polymer Co), and connected it to the epidural catheter (Fig. 1).

We kept injecting the methylene blue into Stensen's duct, and watched the operative area to see where it flowed out (Fig. 2). The next steps were similar to creating haemostasis. When the outflow of the methylene blue was identified, we had three options: to separate the broken duct and ligate it (Fig. 3); to suture the outflow area, or; to electrocoagulate the vessel with a bipolar sealing device. We prefer to separate and ligate the broken duct because, in our experience, there is always a broken duct that we can use to identify the nearby area of outflow reliably and safely. Occasionally, when the branch of the facial nerve lies across the broken duct, efforts should be made to separate and protect the nerve. We repeated these procedures until all broken ducts were treated, and then



Fig. 1. The epidural catheter is inserted into Stensen's duct through the mouth, and the syringe filled with diluted methylene blue is connected to the epidural catheter.

we found the residual parotid gland, because it had turned blue and there was no methylene blue flowing out of it any longer (Fig. 4).

This technique enabled us to locate the pathway for saliva draining through the broken duct, block it, and reduce the risk of a salivary fistula forming.

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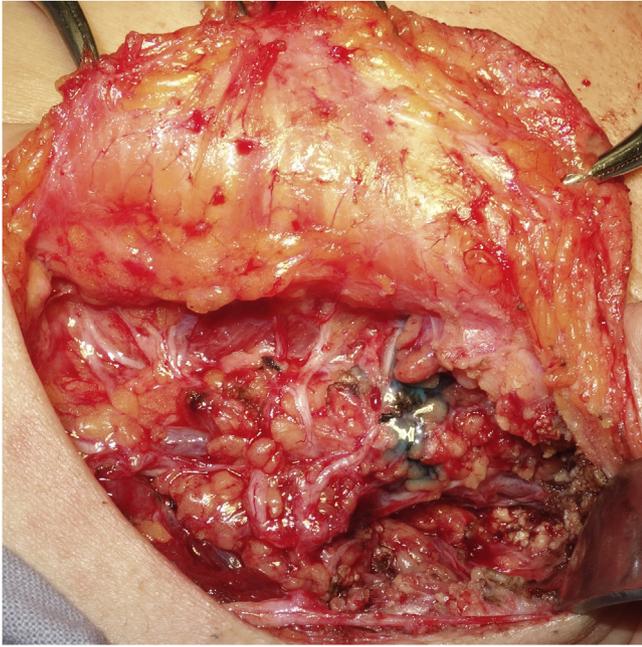


Fig. 2. The methylene blue is injected into Stensen's duct, and the methylene blue flows out from the operated area.

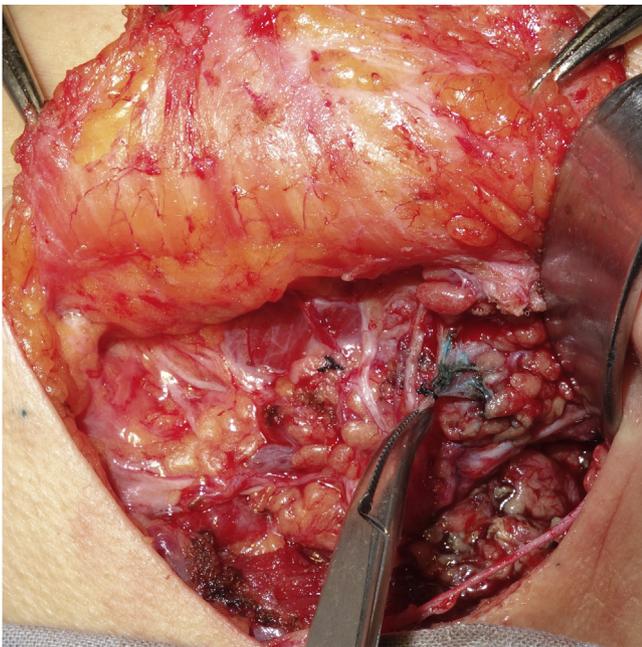


Fig. 3. The broken duct is identified, then separated and ligated.

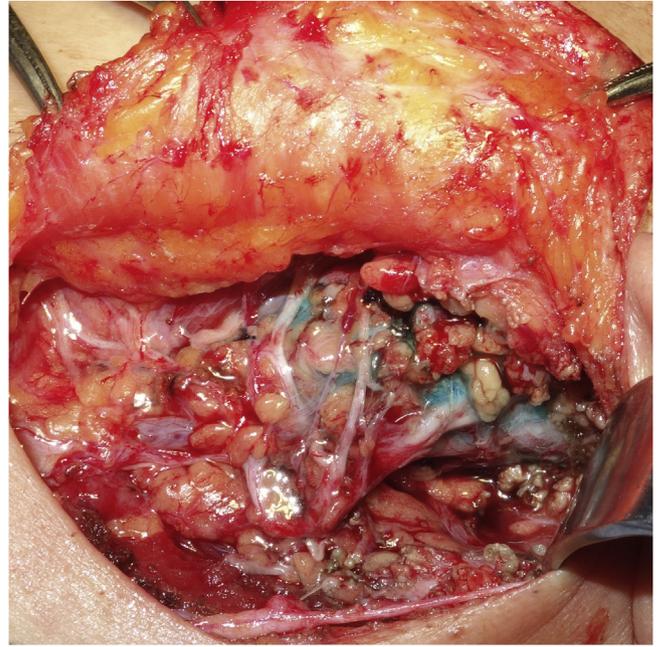


Fig. 4. After all the broken ducts have been treated, no methylene blue flows out, and the residual parotid gland becomes blue.

#### Conflict of interest

We have no conflicts of interest.

#### Ethics statement/confirmation of patient's permission

The work has been approved by the appropriate ethics committees related to the institution in which it was done and all subjects gave informed consent. The patient's permission was not necessary as no images are identifiable.

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