Correspondence

Direct Carotid Cavernous Fistula after Trigeminal Balloon Microcompression Gangliolysis: Case Report

To the Editor: In the recent article by Kuether et al. (4), the authors comment, "the lateral radiograph does not clearly show misplacement," when discussing the position of the needle at the cranial base during balloon compression of the trigeminal nerve for trigeminal neuralgia. Figure 1 of the article shows that the surgeon has positioned the needle through the foramen ovale into the middle cranial fossa. This incorrect advancement beyond the foramen, rather than placement at the cranial base, presumably of a sharp 14-gauge instrument, is the cause of the carotid cavernous fistula. The authors reference the original article by Mullan and Lichtor (5), published in 1983, when describing the technique of balloon compression. A number of more recent articles discuss innovations in the technique designed to prevent complications from using a sharp 14-gauge needle as used in the original description of the technique (1-3). Instead, a cannula system is recommended, which eliminates the use of any sharp points once the cheek is punctured. Unlike needle placement in thermal or glycerol rhizotomy, this cannula should not penetrate beyond the foramen ovale (Fig. 4). Only a thin guiding stylet or the soft balloon catheter passes farther. The procedure should not be performed with a sharp biopsy needle because of the previously described complications of external carotid fistula and the risk of aseptic meningitis thought to be a consequence of minor SAH during compression. When performed using these guidelines, balloon compression is a safe, simple, and effective treatment for trigeminal neuralgia.

FIGURE 4.

Towne view of the cranium, with petrous bone centered in the right orbit, showing the stylet of the No. 4 Fogarty embolectomy catheter positioned at the entrance to Meckel's cave. B, lateral view of the cranium, showing a 14-gauge cannula positioned at the foramen ovale. The stylet of the embolectomy catheter is seen at the radiographic clival line when positioned correctly at the porous trigeminal. C, Towne view of the cranium when the balloon is inflated with 1 ml of radiopaque dye. The tip of the balloon, which represents the tapering "pear" shape on the lateral view, is inflated at the porous trigeminal. D, lateral view of the cranium, with the tapering portion of the inflated balloon correctly compressing the retrogasserian fibers of the trigeminal nerve in the porous trigeminal. The nerve passes over the petrous ridge through a split in the dura. The effective pressure is retrogasserian and not over the ganglion.

REFERENCES