

Short Communication

Use of an ophthalmic knife for middle-ear microsurgery

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Abstract

Traditionally, microscissors, hooks, sickle knives and needles are used in the ear for the dissection and release of fibrous adhesions. The major limitation of these instruments is that they are often bent or blunt, as they are reusable. We describe an ophthalmic knife that offers precision in middle-ear microsurgery.

Key words: Surgical Instruments; Ear, Middle

Microscissors, hooks, sickle knives and needles are the traditional instruments commonly used for dissection and release of fibrous bands and adhesions in the middle ear. The major limitation of these instruments, however, is they are reusable and are often either blunt or bent (Figure 1) and therefore unsuitable for microsurgical work. We describe an instrument that offers precision in the dissection and release of middle-ear fibrous tissue and adhesions.

The EdgeAhead™ Stiletto/MicroVitreous Retinal knife (Becton Dickinson, Bidford, UK; available from BD Ophthalmic Systems, Oxford, UK) (0.90 mm, 20 G) (Figure 2) was originally designed for cataract, vitreoretinal and oculoplastic surgery. It is straight and has a sure-grip handle with a ridge indicating the position of the tapered sharp cutting edge. It has a thin shaft that can easily be bent for access and a fine working tip which is extremely sharp (Figure 3). Minimal tearing of tissue

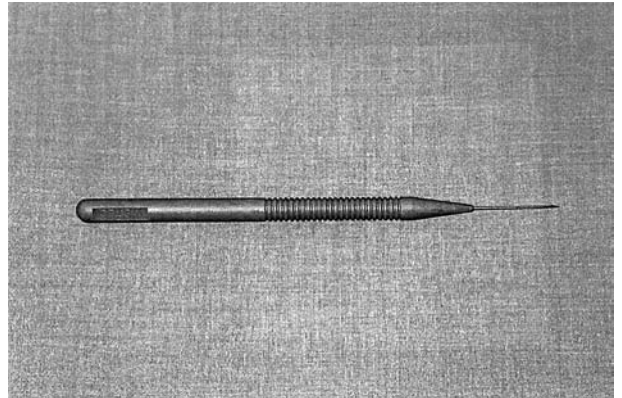


FIG. 2

The Becton Dickinson EdgeAhead™ Stiletto/MicroVitreous Retinal knife (0.90 mm, 20 G).



FIG. 1

A blunt and bent needle.

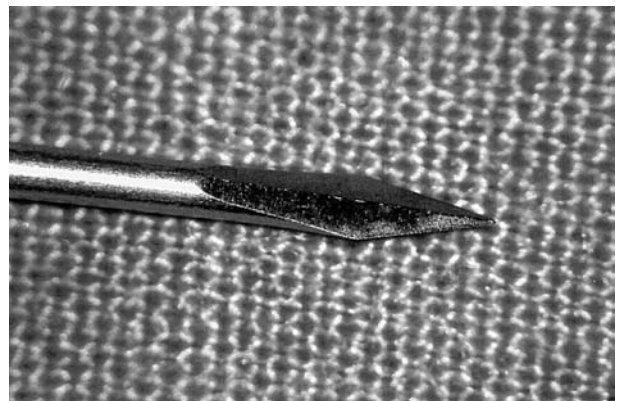


FIG. 3

The sharp cutting tip of the EdgeAhead™ knife.

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FIG. 4

'Freshened' edge of tympanic membrane perforation achieved using the EdgeAhead™ knife.

occurs during dissection because of the knife's extreme sharpness. It is single-use and therefore can be replaced if blunts, and because it is so sharp care is required with fragile structures such as the corda tympani nerve. The senior author routinely uses this precision cutting knife to freshen the edge of tympanic membrane perforations (Figure 4), divide middle-ear adhesions and dissect the corda tympani nerve from fibrous tissue during microsurgical middle-ear work. The knife is easy to manoeuvre and has been very useful for dissection in the often confined and difficult-to-access areas of the stapes and epitympanum. In canalplasty surgery, for stenotic otitis externa, this knife is useful for delicate dissection of dense fibrous tissue from the surface of the tympanic membrane.

The EdgeAhead™ knife is a suitable alternative to a Beaver knife (Becton Dickinson Medical Systems, New Jersey, USA) for the incision or excision of the endolymphatic sac and for myringotomy. The

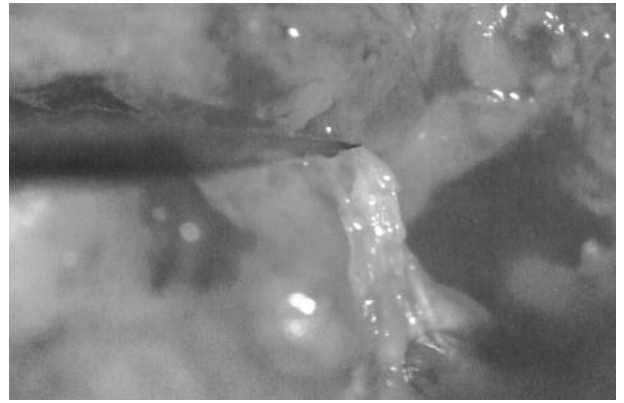


FIG. 5

Cholesteatoma sac dissected from lateral semicircular canal fistula with the EdgeAhead™ knife.

EdgeAhead™ knife is also an asset in skull-base and neuro-otology surgery. The shaft and tip of the knife are being currently redesigned by the authors to adapt to the contours of the middle ear, making it easier to use in otological surgery.

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