

# HOW I DO IT – POST MASTOIDECTOMY RECONSTRUCTION

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## ABSTRACT

Traditionally, there are two approaches for mastoidectomy, namely: canal wall up and canal wall down. Canal wall up approach avoids an open mastoid cavity post-operatively but harbours the disadvantage of a reported higher incidence of recurrence of disease. Canal wall down approach has a reciprocal advantage and disadvantage. This paper reveals a methods of post mastoidectomy reconstruction of the posterior canal wall using the posterior canal skin.

**Keyword:** posterior canal skin.

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## INTRODUCTION

Mastoidectomy is indicated most commonly in a cholesteatomatous ear. By the large, there are two major methods of mastoidectomy: canal wall up (intact canal wall) and canal wall down. The canal wall refers to the posterior bony canal wall of the external ear. The purpose of the attempt to preserve the posterior canal wall is to avoid an open mastoid cavity post-operatively. An open mastoid cavity can pose a tremendous morbidity to the patient such as a continuously discharging cavity. The author has designed a very simple method of using the posterior canal skin to reconstruct the posterior canal wall, thus avoiding an open mastoid cavity post-operatively.

## METHOD

Through the external ear canal, a curve incision is made on the canal skin just lateral to the annulus of the ear drum, extending from about 11 o'clock to 6 o'clock. A post auricular incision is then made. The auricle is retracted forward exposing the mastoid process of the temporal bone. The posterior canal skin is then elevated from the bony canal wall. The elevation is carried down to the peri-auricular curve incision made at the beginning of the operation, leaving the ear drum undisturbed. The posterior canal skin thus elevated is therefore kept in continuity to the auricle. A standard canal wall down mastoidectomy is then done, drilling the canal wall down as close to the facial nerve as possible, drilling away the facial bridge expose fully the attic (Fig 1). The ear drum is next elevated forward so that the middle ear cavity can be inspected for any disease. Cholesteatomatous disease is then cleared from the middle ear, attic and mastoid cavity. Where necessary the malleus and incus may need to be removed. Contented that the cholesteatomatous disease has been eradicated, the reconstruction of the posterior canal wall is begun. A large, temporalis facial graft is har-

vested. The graft having been trimmed into a rectangle, is laid partially under the drum sealing off any perforation of the ear drum (often there is an attic perforation where the cholesteatoma originates). The remainder is brought up to be laid on the posterior canal skin just like one would do in the underlay technique of myringoplasty. This complex of posterior canal skin and temporal facial graft is then positioned in the place where the original bony canal wall would have been. Some Gelforms are packed in the middle ear to support the graft and in attic to support the reconstructed canal wall (Fig 1). If the reconstructed canal wall is found to be too floppy, it may be re-inforced by a layer of periosteum of the mastoid process. However the author does not find this necessary. The mastoid cavity is not obliterated. The post-auricular incision is then closed. The external ear canal is then packed with Gelforms and a ribbon gauze.

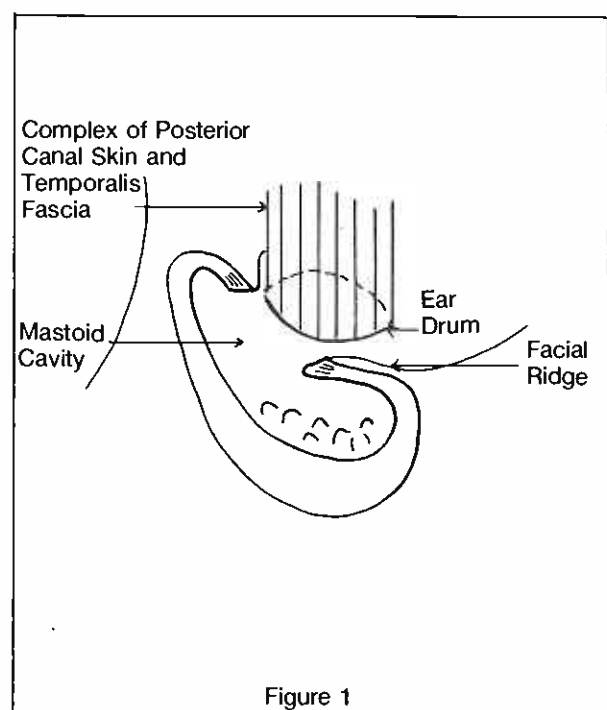


Figure 1

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## DISCUSSION

The author does not attempt to publish statistical results but merely attempts to introduce a method of reconstruction.

The author has done 10 cases using this method of reconstruction of the posterior canal wall. The post-operative result is very satisfactory. This method offers 2 major advantages:

1. Intra-operatively it embraces the advantage of the canal wall down technique of mastoidectomy, be it radical or modified radical; that is, good wide exposure for easy clearance of disease.
2. Post-operatively, it embraces the advantage of the canal wall up technique; that is the avoidance of an open mastoid cavity, the external ear canal and ear drum look like those of a normal ear. Post-operatively, of course, the posterior canal wall consists of nothing other than the posterior canal skin. The author has not attempted to reconstruct

the ossicular chain simultaneously. In a few cases, the ear drum has lowered to the stapedial head to achieve a myringostapediopexy. In those few cases a post-operative average air conduction threshold of around 30 – 40 dB is achievable. The author does not wish to be engaged in the controversy of the need of a post-operative open mastoid cavity to avoid a recurrent cholesteatoma. Suffice it to say that should a recurrence occur, it would be anticipated to reveal itself through the least resistant route, that is, through the drum or posterior canal skin.

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