



ORIGINAL RESEARCH PAPER

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GRADING OF MUCOSA IN COM MUCOSAL TYPE

KEY WORDS: Chronic Otitis Media, Middle Ear Mucosa, Tympanoplasty With Or Without Mastoidectomy.

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ABSTRACT

In chronic otitis media, the middle ear mucosa may be damaged in different degrees according to the degree of disease or the type of organism. There is no accepted classification of the extent to which it is involved. The perforation of the tympanic membrane is a hole in it through which we can peep into the middle ear. This article proposes a classification of the degree of involvement of the middle ear mucosa. Based on this, we can plan the surgery tailored suitable for the patient

INTRODUCTION

Chronic Otitis Media mucosal type is a chronic inflammatory disease of the middle ear cleft of varying involvement in the tubal, tympanic, and mastoid compartments. In the early stages, it may limit in the tympanic compartment. When it is recurrent, it may involve the mastoid compartment also. Then, the condition should be called as otomastoiditis. There is no way to find out whether it is only an isolated middle ear disease or there is involvement of mastoid also except the radiological evidences. If the disease is limited to the middle ear, tympanoplasty is the surgery of choice. If the mastoid is also involved, then a mastoidectomy with tympanoplasty may be ideal surgery. The treatment for the disease varies from person to person, according to the degree of involvement. The degree of involvement of the whole middle ear cleft has to be assessed with various parameters and the treatment should be tailored according to the condition. One such parameter which can be of use is the status of the middle ear mucosa as seen through the perforation with the help of an operating microscope. The mucosa might have damaged in variable degrees. We are proposing, a grading of the mucosa of middle ear mucosa as follows from the experience of operation of 30 years.

Grade	
0	Imperceptible.
I	White mucosa with blood vessels and Tympanic plexus seen.
II	Congested mucosa with blood vessels seen.
III	Congested and oedematous mucosa, blood vessels not seen.
IV	Congested, oedematous moist mucosa with minimal discharge.
V	Congested, oedematous moist mucosa with active discharge. Handle of Malleus may pierce the oedematous mucosa.
VI	Highly polypoid mucosa of middle ear, protruding out either as polyp or granulation.

THE MUCOSA OF THE TYMPANIC CAVITY:

The middle ear mucosa is essentially mucus-secreting respiratory mucosa bearing cilia on its surface. The extent of the muco-ciliary epithelium varies in normal middle ear, being more widespread in the young. Three distinct muco-ciliary pathways can be identified – epitympanic, promontorial and hypotympanic, the latter being the largest. Each of these pathways coalesces at the tympanic orifice of the Eustachian tube. The mucous membrane lines the bony walls of the tympanic cavity, and it extends to cover the ossicles and their supporting ligaments in much the same way as the peritoneum covers the viscera in the abdomen. The mucosal folds also cover the tendons of the two middle ear muscles and carry the blood supply to and from the contents of the tympanic cavity. These folds separate the middle ear space into compartments. As a result, the only route for ventilation of the epitympanic space from the mesotympanum is via two small openings between the various mucosal folds – the anterior and posterior isthmus tympani.

DISCUSSION

PATHOLOGY OF CHRONIC OTITIS MEDIA:

A number of histopathological changes can develop in the middle

ear and mastoid in COM. Some changes are the direct result of infection and inflammation, while others represent the host response to the disease process. These changes lead to the symptoms and signs of COM and also play an important role in determining success or failure of tympanomastoid surgery for COM.

Pathology of inactive mucosal type (dry perforation):

There is a permanent perforation of the pars tensa, but the middle ear and mastoid mucosa is not inflamed. A perforation may be completely surrounded by a remnant of the pars tensa or a part of the perforation may extend to the fibrous annulus.

Pathology of active mucosal type (active):

There is chronic inflammation within the mucosa of the middle ear and mastoid, with varying degrees of oedema, submucosal fibrosis, hypervascularity and infiltration with lymphocytes, plasma cells and histiocytes. Areas of the mucosa may ulcerate with proliferation of blood vessels, fibroblasts and inflammatory cells, leading to the formation of granulation tissue. There is production of mucopurulent discharge which drains via a tympanic membrane perforation. The mucosal changes may progress and coalesce to form aural polyps, that can protrude through defects of the tympanic membrane. Inflammatory changes described above occur not only in the tympanic cavity, but in the entire middle ear cleft including the mastoid antrum and various air cell tracts of the temporal bone.²

Active mucosal COM is often associated with resorption of parts or all of the ossicular chain ('resorptive osteitis').³ The long process of the incus, stapes crurae, body of incus and manubrium are involved in that order of frequency. The reason that the long process of the incus and stapes superstructure are most frequently affected is likely to be due to their delicate structure and location rather than their tenuous blood supply. Resorption of bone is a feature of active mucosal and active squamous epithelial COM (cholesteatoma).

Chronic inflammation can affect the whole of the middle ear cleft including the mastoid antrum, and is being tackled in two ways. Some surgeons believe it is important that when the middle ear cleft is reconstructed with the closure of perforation, the whole of the infected mucosa and granulation tissue from the mastoid and middle ear space should be removed in order to control the disease. However, another opposing view is that, a concomitant Mastoidectomy is not required along with the Tympanoplasty. The two opposing demands of tympanoplasty namely, removal of all disease process and at the same time trying to maintain as much of normal tissue as possible to facilitate reconstruction of the hearing mechanism is a demanding task. As long as there is infection lurking in and around the middle ear cleft and mastoid antrum, any attempt at reconstruction may seem futile.⁴

CONCLUSION

This is a new classification of the middle ear mucosa which helps in the grading of mucosa into 6 types and the surgery to be performed can be planned. In the first and second grades, only a tympanoplasty is required. In 5 and 6 grades mastoidectomy with tympanoplasty is necessary. In the 3 and 4 grades other

collaborative criterions like the duration of the disease, x ray mastoids etc. also may help in taking the decision.

REFERENCES

1. Sade J.; Middle ear mucosa;Archives of Otolaryngology–Head & Neck Surgery;1966; 84: 137–43.
2. Steven A, Telian, Cecelia E. Schmalbach; Chronic otitis media; James B Snow Jr., John Jacob Ballenger; Ballenger's Otorhinolaryngology head and neck surgery; 16th edition; Shelton; BC Decker; 2003; 261 – 293
3. Steven A, Telian, Cecelia E. Schmalbach; Chronic otitis media; James B Snow Jr., John Jacob Ballenger; Ballenger's Otorhinolaryngology head and neck surgery; 16th edition; Shelton; BC Decker; 2003; 261 – 293
4. Kamath MP, Suja S, Raghavendra R, Vinay R, Krishnam R.; Success of myringo plasty: Our experience; Indian Journal of Otorhinolaryngology and Head and Neck Surgery; 2013; 65(4) : 358–362