

## Epidural Abscess Secondary to Chronic Otitis Media with Cholesteatoma

Shoichi MAEDA

*From the Department of Otolaryngology,  
Yamaguchi University School of Medicine,  
Ube, Japan.*

*(Director; Professor Shoichi Honjo)*

*(Received May 20, 1971)*

The number of intracranial complications secondary to otitis media, especially acute one, has been greatly diminished since the introduction of antibiotics according to Proctor<sup>1)</sup>. Courville<sup>2)</sup> and Dawes<sup>3)</sup> reported the diminishing of death rate of intracranial complications.

However, antibiotics have not been able to control all intracranial complications of middle ear infections, being considered as the masking effect.

We will report a case of otogenic intracranial complication due to a cholesteatoma.

### REPORT OF A CASE

A 15 year-old boy was first seen in our Department on February 22, 1971, complaining of a slight headache in the right temporal area, otorrhea and hearing loss on both sides during the past one month. He has had a simple mastoidectomy on the left side at the age of four year old, because of a middle ear infection. After the surgery, he has had no medical treatments for ears, although otorrhea has been present occasionally. On January 7, 1971, he had a head trauma of striking his left temporal area with an unconsciousness for a few minutes when he fell down at playing ski. Immediately, he was admitted to a hospital, received medical managements, and discharged on January 13, in the same year. However, the following day, he readmitted to the same hospital because of an attack of high fever and vomiting. He developed a swelling with pain in the preauricular area and otorrhea on the left side, and a headache. On January 18, he was performed on a surgery for the swelling of the preauricular region and received treatments with drugs without any improvement. After the discharge, he was referred and immediately admitted to our Department for further evaluation on February 22, 1971.

He was in the normal state of consciousness, memory, feeling, character, speech and had no symptoms or signs of obvious meningeal irritation except a slight headache in the left temporal area. Examinations showed the left external

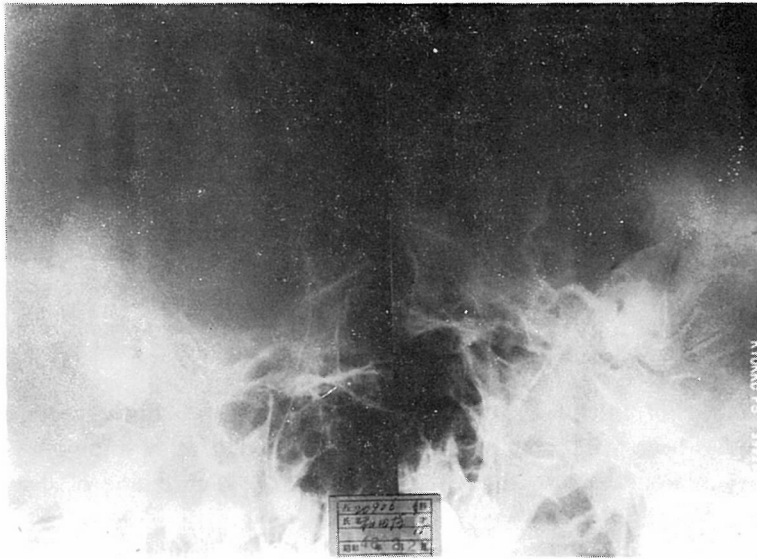


Fig. 1.

auditory canal filled with cholesteatomatous debris protruding from the epitympanic cavity and with a muco-purulent discharge. The posterior bony wall of the external auditory canal was destroyed and retracted. There was an old scar of the previous operation on the postauricular region and a fistula,  $1 \times 0.1$  cm. in size, on the left preauricular area. A small perforation of the pars flaccida was observed on the right side, from which a drainage was coming out. As shown in Figure 1, X-ray examination showed a sclerotic mastoid process in both ears and a large shadow on the pars squamosa of the left temporal bone which was postulated as a bony defect due to the evidence of a cholesteatoma. A culture of the ear discharge revealed many bacilli, such as staphylococcus aureus, proteus vulgaris and klebsiella. A audiogram showed conductive hearing loss on both sides, as shown in Figure 2. The loss of hearing was dominant on the left side. Routine examinations for the peripheral blood and urine, E.C.G., and X-ray of the chest showed nearly normal results.

On March 2, he was performed on an otitic intracranial operation on the left side. An incision was made along the previous operation scar on the left postauricular area, extending preauricularly. The mastoid cortex which had been removed at the previous operation was detected, and the temporal muscle was denuded. The squamous part of the temporal bone was destroyed by the invasion of the cholesteatoma which also involved the antero-superior part of the external auditory canal. The cholesteatoma matrix bulged from the fistula of the external auditory canal (see Fig. 3). The remaining squamous part was resected for removal of the pus and cholesteatoma which infiltrated to the temporal epidural space.

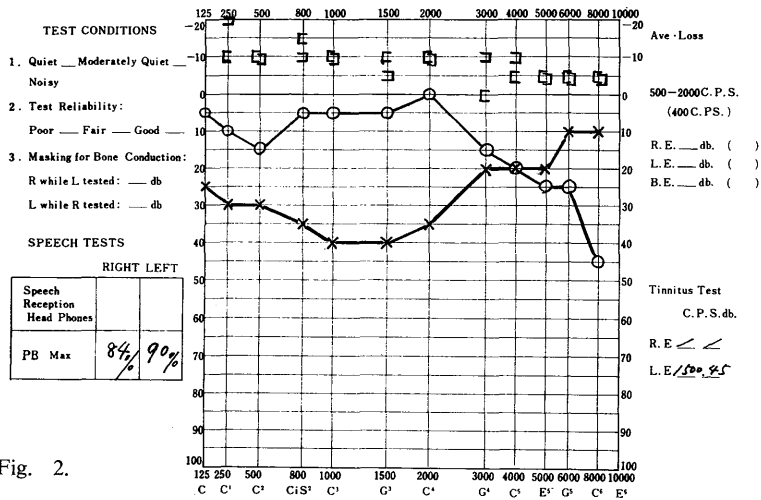


Fig. 2.

The dura that was thick and infiltrated by cholesteatomatous debris was exposed at the squamous and petrous part of the temporal bone. The cholesteatoma and granulation were removed (see Fig. 4). In the middle ear cavity there was a granulation mass, which was removed. Neither fistula of the labyrinth nor the bony destruction of the facial canal was observed. Drainages were placed to the wound which was left open. The postoperative course was uneventful and the headache disappeared. The postauricular incision was closed and sutured ten days later. He was discharged on May 29, 1971.

COMMENT

Otitis media with a cholesteatoma is not rare, but its intracranial complication is infrequent recently.

Rüedi<sup>4)</sup> reported that 1.7 percent of 763 cases of chronic otitis media with a cholesteatoma caused intracranial complications. Iwasawa's<sup>5)</sup> report also showed 11 cases of intracranial complications out of 102 cholesteatomatous otitis media. One of otogenic intracranial complications, the epidural abscess, is usually not direct life-threatening, but it sets the stage for subsequent intradural complications which is life-threatening. The epidural abscess of the middle cranial fossa is likely to lead to meningitis, subdural empyema of the parietal area, and temporal lobe abscess, while that of the posterior cranial fossa is to lateral sinuses thrombosis and cerebellar abscess. The bacteriology of epidural abscess varies and follows that of otitis media.

Although antibiotic therapy is important in the management of the infections process associated with epidural abscess and in prevention of an intradural com-



Fig. 3.

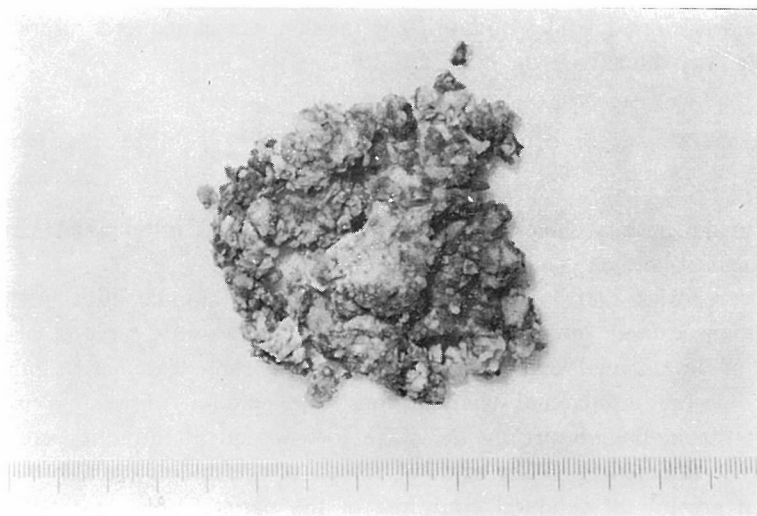


Fig. 4.

plication, the timely surgical treatment is more important and useful one. So, it is necessary to diagnose in the early stage. A patient who complains of headache, nausea, vomiting or other untoward symptom occurring in the course of otitis media should be always suspected of intracranial complications and applicated of careful examinations, such as skull X-ray, lumbar puncture and other neurological tests.

## SUMMARY

A case of epidural abscess in the left temporal squamosa was reported. It occurred secondary to a middle ear cholesteatoma which destroyed the temporal bone widely.

## ACKNOWLEDGEMENT

The author thanks Professor Dr. S. Honjo for his allowance to publish this paper and his kind guidance, and also to Dr. G. Mogi for his interest and guidance.

## REFERENCES

- 1) Proctor, C. A.: Intracranial complications of otitic origin, *Laryng.*, **76**: 288-308, 1966.
- 2) Courville, C. B.: Symposium: Intracranial complications of otitis media and mastoiditis in antibiotic era, *Laryng.*, **65**: 31-46, 1955.
- 3) Dawes, J. D.: Discussion on intracranial complications of otogenic origin, *Proc. Roy. Soc. Med.*, **54**: 309-320, 1961.
- 4) Rüedi, L.: Pathogenesis and treatment of cholesteatoma in chronic suppuration of the temporal bone, *Ann. Otol., Rhinol. and laryng.*, **66**: 283-305, 1957.
- 5) Iwasawa, T. et al: Clinical observation cholesteatomatous otitis media-Part 1. The relation of clinical and operative findings, *Otolaryng.*, (Japanese), **36**: 21-26, 1964.