DISTANT INFECTIONS CAUSED BY
THROMBOPHLEBITIC COMPLICATIONS OF
CHOLESTEATOMA

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ABSTRACT

The report of two cases of chest and kidney infections reminds of the
possibility of distant infections caused by thrombophlebitic complications of
cholesteatoma.

Deep neck infection, mediastinitis, pleural empyema, pulmonary abscesses
and hematogenic microabscesses of kidney have been proved by clinical,
radiologic and laboratory examinations in two cholesteatoma patients. The
clinical course of distant infections could be terminated by effective surgical
elimination of contaminated thrombi from sigmoid sinus during a mastoid
surgery.


INTRODUCTION

Cholesteatoma is still a major concept in the
otolaryngology texts and the everyday ENT practice.
The availability of antibiotics and modern otologic
surgical skills have reduced the incidence of the
cholesteatomas’ major complications.2-3,5 Today’s
physicians may remember few of the complications of
cholesteatoma. If an unusual complication is developed,
its diagnosis is difficult to make. To know the
cholesteatoma as a factor is even more difficult. The
senior author has reported sixteen cases of sigmoid
sinus involvement,4 pointing to the effective method of
treatment after a due suspicion to make early and
intraoperative diagnosis. The recent medical literature is
lacking the significance of these clinical entities. The
result of this ignorance is to drop the cholesteatoma and
thrombophlebitis from the list of differential diagnosis.
Teichgraeber and Sneed4,6 have reported their cases and
the report of 23% mortality rate from thrombophlebitis
within the lateral sinus, is an alarming point. Our
previous cases not producing mortality, have increased
the patient hospitalization days4 and expenses. The
multidisciplinary approach and our aggressive method
of treatment could save the lives of patients suffering
this highly morbidious problem.

This presentation is to report the significance of
cholesteatoma and its complications to our medical
profession and the other medical specialties. Practicing
physicians in the fields of infectious diseases,
pediatricians, internists and every one who is involved
with an unknown hematogenous infection has to be
aware of thrombophlebitic involvement in the course of
bone-eroding cholesteatoma of middle ear and mastoid.

REPORT OF CASES

The report of two cases is the basis for this
presentation. The far distant infectious problems that
are diagnosed in these two patients brings us back to
our original profession as a physician to treat the
patient, not the disease. We may dare to replace the
sentence “Pus somewhere, pus nowhere, pus under the
diaphragm” with our sentence, “pus somewhere, pus
nowhere, pus within the sigmoid sinus.”
Thrombophlebitic Complications of Cholesteatoma

CASE 1

A 9-year-old boy from a low socioeconomic class presented to the ENT department of Ghaem Medical Center in Mashhad, with an outpatient diagnosis of deep neck infection. His opening clinical scene with high fever, malaise and tenderness over his left side of neck made us to incise and drain the neck via a left lateral cervical oblique incision. The diagnosis of cholesteatoma in his left mastoid was made by otoscopy and x-ray examination (Figure 1). While waiting for his condition to improve for doing a mastoidectomy, a night report suggested an acute mediastinitis. The child had severe sweating and shortness of breath. A chest film (Figure 2) made the diagnosis of pleural effusion and/or empyema. The patient being on his original antibiotic coverage, underwent a right chest tube insertion, draining pus. The same bacteria that were previously cultured from the neck-streptococci were obtained.

During his postoperative days after his chest tube insertion, he noticed pain in the region of his kidney. Urinalysis showed proteinuria and hematuria. He did lose several pounds of weight. Antibiotic coverage with penicillin and chloramphenicol continued until chest cleared up. He underwent a left mastoidectomy after we noticed a complete air-bone gap of 60 dB in his hearing work up and an obstructed lateral sinus confirmed with the Toby-Ayer test. His canal-wall down mastoidectomy revealed the destruction of sinus plate. The sigmoid sinus opened-up in a longitudinal direction and the infected thrombus was evacuated from the sinus until free blood was noticed and bleeding controlled.

CASE 2

A 19-year-old male was transferred to our ENT ward from Department of Pulmonary Medicine after he had been admitted and treated for multiple pulmonary abscesses. Otorrhea and tenderness over mastoid was
noticed by the internist. He was on antibiotic regimen and postural drainage with some degrees of improvement, when we decided to start our otologic work-up and intervention. A conductive hearing loss and an eroded sinus plate in standard mastoid films, in a patient with the distant pulmonary infection and mastoid abscess prompted the evacuation of mastoid from the cholesteatoma (Fig. 3.4).

During a canal wall down mastoidectomy the sub-periosteal mastoid abscess was drained. The sinus plate was missing and replaced by periphlebitic abscess and granulation tissues. After eradication of the diseased tissues the sigmoid sinus was incised in longitudinal direction and the thrombus evacuated from sinus to let free blood flow. The bleeding was controlled with an antibiotic impregnated pack. This patient was also discharged from the hospital in good condition. His chest film at the time of discharge is shown in Fig. 5.

**DISCUSSION**

Distant infections within the parenchyma of any organ will occur whenever the septic emboli enters the blood stream from a vein involved with infectious process. This is a well known process being discussed in pathology texts. Physicians may forget that the same process may happen in the body of their patient who is under their treatment for a localized disease. This is especially true when the localized infection is close to a large vein. We are all familiar with thrombophlebitis of the lower extremities in trauma and gynecology patients. In head and neck, the internal jugular vein and the large intracranial sinuses are also venous structures that can be involved when they are in close proximity of an infectious process.

The present article may promote the alertness of physicians to the aforementioned pathologic process. The proximity of the sigmoid sinus to the infected mastoid air cells makes it quite possible. Thrombophlebitis of the sigmoid sinus while a complication belonging to the historical medicine, is still being reported as sporadic cases. If the sigmoid sinus can be involved with infection, its septic emboli can reach every organ receiving the infected blood.

**REFERENCES**