PEDIATRIC VENTRICULOPERITONEAL SHUNT INFECTION: THE ROLE OF SHUNT TRACT DEBRIDEMENT IN MYCOBACTERIUM ABSCESSUS ERADICATION

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Background: Ventriculoperitoneal (VP) shunt infections caused by Mycobacterium abscessus are extremely rare and very pathogenic. Given the paucity of reported M. abscessus shunt infections, the surgical treatment has yet to be described. We systematically review the literature and describe the management of the second-ever pediatric M. abscessus VP shunt infection, highlighting the role of early, aggressive surgical debridement to achieve infection eradication.

Materials/Methods: A 4-year-old male with history of hydrocephalus presented with an M. abscessus VP shunt infection that disseminated to the skin and soft tissue along the shunt tract. Despite antimicrobial therapy, shunt exchanges, and incisions and debridements, his clinical course was prolonged (289 days) by multiple relapses and readmissions. Only after Plastic Surgery repeatedly opened and debrided the entire length of the tract (which measured 100cm2 and extended from the scalp to the groin) and months of intrathecal antibiotics did cultures become persistently negative, allowing the tract to be closed. The patient has been culture negative for 2 years, and the entire shunt tract has healed.

Results: Including our patient, 5 cases of M. abscessus VP shunt infections have been reported: 2 children and 3 adults. In all cases, the clinical course was prolonged by multiple relapses. Despite undergoing shunt removal coupled with antimicrobial therapy and achieving negative CSF cultures, all patients relapsed, with cultures grew multidrug-resistant M. abscessus. Recurrence with disseminated skin and soft tissue disease along the shunt tract was seen in 3 patients, and in the 2 with no report of soft tissue infection, the patient died during treatment. In the 3 cases where the infection was successfully cleared, eradication was achieved only after removal of all shunt fragments and debridement of soft tissue. The necessary extent of debridement is especially emphasized in our case, as draining isolated abscesses proved insufficient, and only by debriding the length of the infected shunt tract did we establish eradiation.

Conclusions: Ventriculoperitoneal shunt infections caused by M. abscessus are rare, and their management is challenging. Modification of preexisting management algorithms for shunt infections is required if M. abscessus is suspected. Unlike with other VP shunt infections, cure is not likely to be achieved with shunt removal and targeted antibiotic therapy unless accompanied by extensive skin and soft tissue debridement.