Letter to the Editor

Congenital dumbbell neurenteric cyst mimics neonatal brachial plexus injury

We present a case of a 3-month-old female infant, G2P2. She was born at a gestational age (GA) of 37 weeks and with a birth body weight of 3010 g and was delivered via cesarean section. The mother underwent regular prenatal examination, which showed a cystic lesion over the posterior mediastinum since the GA of 21 weeks (Fig. 1A). It was noticed that the infant had torticollis and right claw hand since birth, which mimicked a neonate brachial plexus injury (nBPI) (Fig. 1B). At the age of 3 months, the patient was referred to us, and impaired movement of right forearm was noticed as well as ankylosis of elbow, adduction of right thumb, and flexion of index finger with a poor grasping reflex. Plain anteroposterior (AP) film showed right hemi-vertebrae of 4th to 6th cervical vertebrae and scoliosis and convexity to the left side (Fig. 1C). MR images of the spine (Fig. 1D) disclosed an enlarged dumbbell cystic lesion in the paravertebral region at C4-T6 levels. The intradural extramedullary components extended via the right C4-5 neural foramen into the intrathoracic cavity causing compression of right upper lung and syringomyelia at C4-5 levels. Electromyography revealed denervation with decreased recruitment at the right deltoid, biceps, and extensor digitorum communis muscle, in favor of partial C5-7 involvement. Due to the compressive neuropathies, we performed a combined operation that included C3-T1 laminotomy for resection of intradural components and detethering the attachment on the cervical spinal cord (Fig. 1E), sealing the dura defect, and then thoracotomy for total resection of intrathoracic cystic lesion. The pathology report showed that the cystic wall is composed of a double layer of gastric and intestinal squamous- and columnar-type epithelium and smooth muscle tissue containing nerve and ganglion, which is compatible with a neurenteric cyst (Fig. 1F).

Four months after the operation, the electromyography showed improvement of the denervated musculature. MR image showed no recurrence during the follow-up period of 4 years.

1. Discussion

nBPI is a common injury during the neonatal periods, which is highly associated with shoulder dystocia, breech delivery, and assisted delivery via instruments and other factors such as macrosomia and gestational diabetes. Early mobilization and rehabilitation of the affected extremity usually result in good outcome, and following that, only few patients need a surgery. Although, generally, good recovery was noted in the scenario of nBPI, obstetricians were often the first to be blamed despite meticulous practice.

In our case, a large dumbbell neurenteric cyst, mimicking nBPI, was diagnosed. Spinal neurenteric cyst is a rare congenital tumor thought to occur due to failure of separation of the primitive endoderm and ectoderm. It was typically found in the cervicothoracic region, with an intradural/extramedullary presentation. Although it is a congenital tumor, most cases may remain asymptomatic until adulthood. The symptoms can include neck/back pain, meningitis due to leakage of cystic content, dyspnea, and myelopathy or radiculopathy. Prompt surgical resection and decompression of cervical radiculopathy is essential for good recovery, whereas in nBPI rehabilitation is required.

This report describes the orthopedic and neurological conditions associated with congenital neurenteric cyst in neonates. The cyst could be misdiagnosed as nBPI when it is located on the cervicothoracic junction. Conservative rehabilitation for a period of time may delay the optimal timing of surgical treatment. Prompt etiology, diagnosis, and treatment will help reduce the liability risk of our obstetrician colleagues.
None.

References


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