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AJNR Am J Neuroradiol 1984, 5 (3) 329-330

<http://www.ajnr.org/content/5/3/329.citation>

This information is current as
of April 4, 2024.

Sonographic Recognition of Postoperative Meningocele

Patricia A. Laffey¹ and Morrie E. Kricun²

Although the application of sonography in diseases of the spinal canal and its contents is limited because of the inability of sound waves to penetrate the bony elements of the canal, it has been used successfully to evaluate spinal stenosis in adults and dysraphism in fetuses and infants [1–5]. We report another application of sonography in the evaluation of spinal disorders.

Case Report

A 59-year-old woman was seen 3 months after laminectomy at L3–L5 and discectomy at L3–L4 for central herniated disk. She had occipital headaches exacerbated by coughing and low back pain radiating to the right leg. On examination a small, nontender, fluctuant mass was noted lateral to the laminectomy incision.

Sonography showed a multilocular cyst at the L3 level with a large, deeper component ($4.2 \times 3.8 \times 5$ cm), apparently communicating with a small, superficial locule ($2.5 \times 1.5 \times 2.5$ cm) and a third separate, superficial cyst ($2.2 \times 1.5 \times 2.2$ cm) about one interspace higher (figs. 1A and 1B).

The largest cyst was demonstrated on computed tomography (CT) (fig. 1C). Metrizamide myelography and CT studies failed to show any communication between the cyst and the thecal sac. At surgery, a small fistulous communication between the two small, superficial

cysts and a larger communication between the distal superficial and deep cysts were found. The only communication between the thecal sac and the large, deep cyst consisted of two punctate holes 2 mm apart. The cysts were drained and excised. The friable dura was covered with Gelfoam, and muscle flaps were closely approximated over the site. The postoperative course was uneventful.

Discussion

Pseudomeningocele formation is a well recognized complication of lumbar laminectomy [6–18]. Most cases are seen within the first 2 years after laminectomy with recurrent back pain and occasionally headache. A palpable mass is uncommon but may occur [6, 7]. The size of the dural hole is often small (less than 5 mm), and cysts vary widely in size. They are usually unilocular, although multiple cysts or “daughter” cysts have been noted [6, 8]. There is believed to be no apparent relation between the severity of the symptoms and size of the cyst or fistulous communication [7, 9].

While fewer than 35 cases of postoperative pseudomeningocele have been reported in the literature, it has been suggested that this may be a more common entity, with asymptomatic or mildly symptomatic cases not being diag-

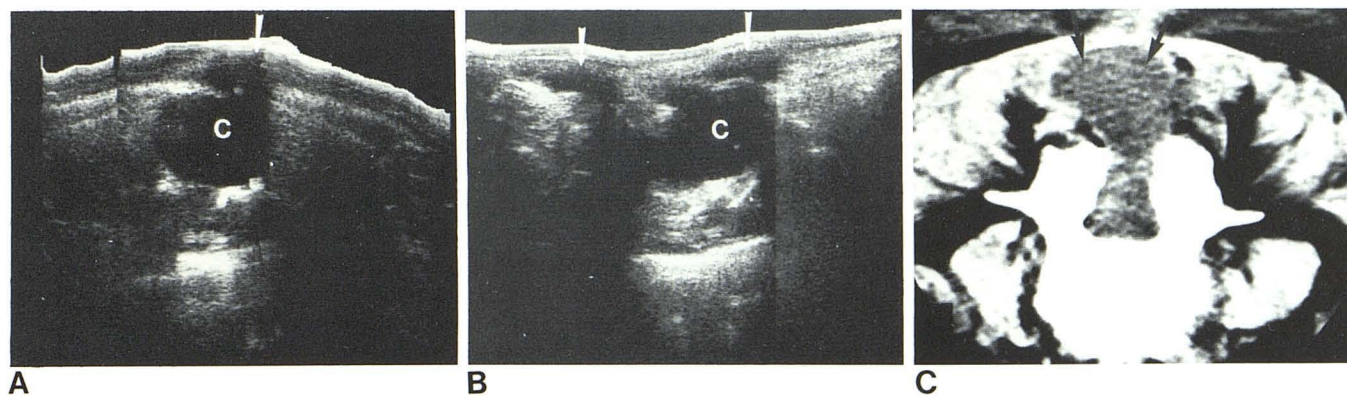


Fig. 1.—A, Transverse sonogram in prone position shows largest deep cyst (C), which communicates with smaller, more peripheral cyst (arrow). B, Sagittal sonogram shows three components with largest deep cyst and smaller cysts

(arrows) more peripherally at same level and one interspace above. C, CT scan shows largest deep cyst (arrows). Small percutaneous cyst is obscured within scar tissue in this area.

This article appears in the May/June 1984 issue of *AJNR* and the July 1984 issue of *AJR*.

Received December 2, 1982; accepted January 4, 1983.

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nosed [9, 11]. Part of the reason for this is unwillingness to submit these patients to myelography. The advent of CT as a noninvasive procedure has made postoperative evaluation less traumatic, and pseudomeningoceles have been recognized with this technique [10].

Removal of the lamina provides an "acoustic window" for sonographic examination, and this modality can provide an even simpler and less expensive, noninvasive method of screening postoperative patients for this complication.

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