

Are your MRI contrast agents cost-effective?

Learn more about generic Gadolinium-Based Contrast Agents.



**FRESENIUS
KABI**

caring for life

AJNR

**Radiologic recognition of symptomatic spinal
synovial cysts.**

E S Casselman

AJNR Am J Neuroradiol 1985, 6 (6) 971-973

<http://www.ajnr.org/content/6/6/971.citation>

This information is current as
of April 9, 2024.

Radiologic Recognition of Symptomatic Spinal Synovial Cysts

E. Scott Casselman¹

Synovial cysts of diarthrodial joints have long been recognized [1]. Clinically, they have most often been found in association with one of the arthritides [2, 3]. Though synovial cysts can involve the facet joints of the spine, this fact was little appreciated until very recently [4, 5]. Radiographically, these lesions were extremely difficult to diagnose and were rarely recognized preoperatively. With the advent of computed tomography (CT), spinal synovial cysts could be clearly imaged. In a recent case report, Hemminghytt et al. [6] emphasized that these cysts usually present with pain but without additional sensory or motor findings. Therefore, surgery would not be indicated in most cases, presumably because these cysts incidentally accompany the facet syndrome of lumbar facet arthropathy. The lumbar synovial cyst described here, which was documented by contrast opacification at facet arthrography and by subsequent surgery, compressed the adjacent nerve root and ultimately required excision to relieve the patient's radiculopathy.

Case Report

A 65-year-old woman developed pain radiating to her left buttock, hip, thigh, and calf as far as the ankle. The pain was aggravated by motion but not by coughing. Physical examination 4 months later revealed mild weakness of the dorsiflexors of the left foot and positive straight leg raising at 70°. No other sensory or motor findings were present. There were no signs or symptoms on the right side. Radiographically, plain films of the lumbar spine showed moderate degenerative arthritic changes of the L4-L5 facet joint to the left side. Subsequently, a CT scan was obtained on a GE 8800 scanner using contiguous 5-mm-thick slices. No contrast material was administered. The scan confirmed facet arthropathy and revealed an 8 mm calcified, spherical mass adjacent to the left L4-L5 facet joint extending superiorly and medially into the spinal canal (figs. 1A and 1B). Facet arthrography was subsequently performed. Two ml of Conray 60 (iothalamate meglumine), 40 mg of Marcaine (0.25% bupivacaine hydrochloride), and 40 mg of Depo-Medrol (methyl prednisolone acetate) were injected into the facet joint (fig. 1C). Immediately thereafter, the region was rescanned, documenting the intracapsular location of the contrast material and demonstrating the communication of the calcified mass with the facet joint space (fig. 1D). Within

days, the patient experienced moderate improvement of her symptoms, but within 3 months, they had worsened.

Four months later, metrizamide myelography showed an extradural defect at L4-L5 on the left. A CT scan was obtained immediately, using the same technique described above. The metrizamide injection confirmed that the defect was the calcified mass seen 4 months earlier, that it was extradural, and that it compressed the L5 nerve root to the left (figs. 1E and 1F). At surgery, a "firm, white, glistening capsule containing white grumous material" was found attached to and extending from the medial articular surface of the left L4-L5 facet joint. It was removed. The annulus fibrosus was noted to be intact. Pathologic review of the surgery specimen was consistent with but not diagnostic of synovial cyst. Postoperative CT of the region revealed absence of the previously identified mass (fig. 1G). The patient was virtually symptom-free on the first postoperative day. She was still asymptomatic 9 months after surgery.

Discussion

This case report confirms the conclusion of Hemminghytt et al. [6] that the diagnosis of intraspinal synovial cyst can be strongly suggested by CT scanning. It is further noted here that a virtually conclusive diagnosis can be reached if CT is performed after facet arthrography, a rather simple procedure with low morbidity [7]. Furthermore, this case illustrates that, at least occasionally, synovial cysts can cause nerve root compression with resultant motor and sensory radiculopathy requiring surgical excision for cure.

ACKNOWLEDGMENT

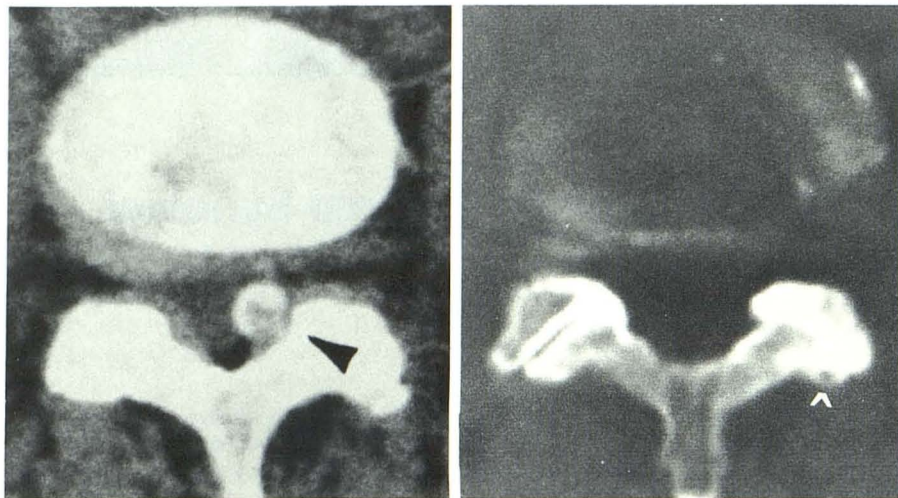
I thank Richard L. Baron for his substantial and continuous encouragement.

REFERENCES

1. Kao CC, Uihlein A, Bickel WH, Soule E. Lumbar intraspinal extradural ganglion cyst. *J Neurosurg* 1968;29:168-172
2. Linquist PR, McDonnell DE. Rheumatoid cyst causing extradural compression; a case report. *J Bone Joint Surg* 1970;6:1235-1240
3. Bamzai A, Kreiger M, Kretschmer RR. Synovial cysts in juvenile

Received July 9, 1984; accepted after revision November 7, 1984.

¹ Department of Radiology, General Hospital of Everett, Everett, WA 98201. Reprint address: Radiology Associates of Everett, 3822 Colby Ave., Everett, WA 98201.

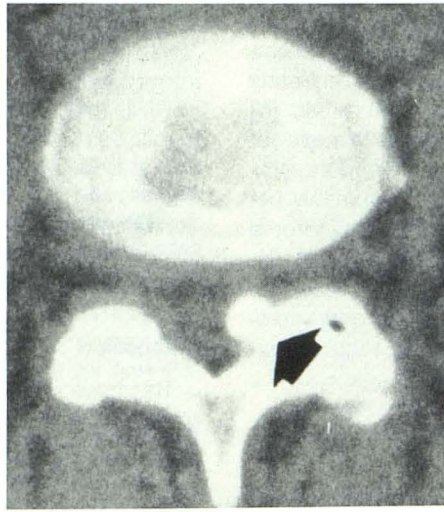


A

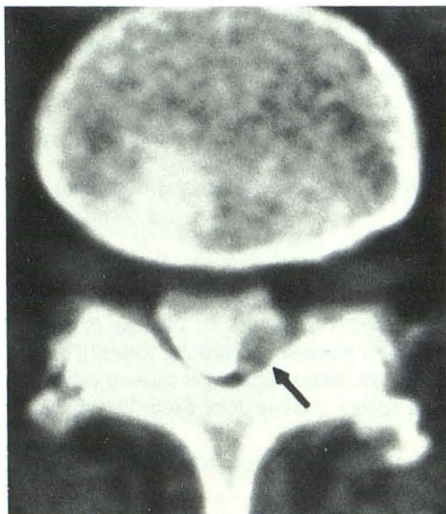
B



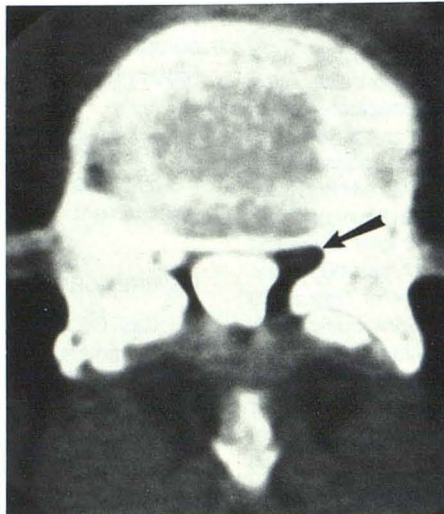
C



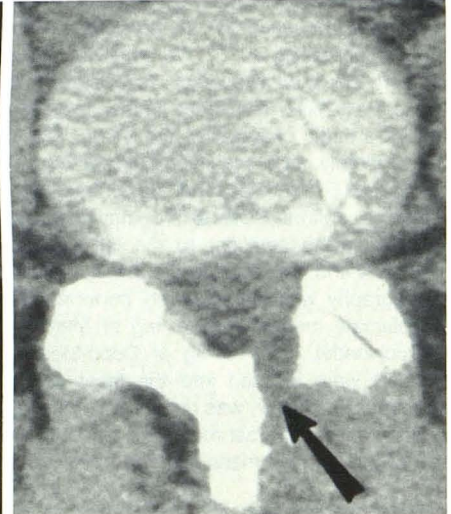
D



E



F



G

Fig. 1.—A, L4–L5 facet joint (at soft-tissue window setting) shows 8 mm calcified mass (*arrowhead*) adjacent to left facet joint, extending into spinal canal. B, L4–L5 facet joint, bone window setting. Joint space narrowing and eburnation on symptomatic left side (*arrowhead*). C, Arthrography at L4–L5 identifies intraarticular injection of contrast material (*arrowhead*). D, CT scan at L4–L5 immediately after arthrogram. Contrast enhancement within calcified mass (*arrow*) verifies its communication with synovium of facet joint. E, CT metrizamide myelogram at L4–L5. Extradural mass (*arrow*) at same location as in A. F, More caudal location. Poor filling at L5 nerve root sleeve to left (*arrow*) indicates nerve-root compression at more cephalad level in E. G, Postoperative CT scan at L4–L5. Partial hemilaminectomy at L4 with surgical removal of intracanalicular synovial cyst (*arrow*). (Cf. A at comparable level.)

rheumatoid arthritis. *Ann Rheum Dis* **1978**;37:101-103

4. Bhushan C, Hodges FJ III, Wityk JJ. Synovial cysts (ganglion) of the lumbar spine simulating extradural mass. *Neuroradiology* **1979**;18:263-268
5. Haughton VM, Williams AL, Cusick JF, Meyer GA. A myelographic technique for cysts in the spinal canal and spinal cord. *Radiology* **1978**;129:717-719
6. Hemminghytt S, Daniels DL, Williams AL, Haughton VM. Intra-spinal synovial cysts: natural history and diagnosis by CT. *Radiology* **1982**;145:375-376
7. Carrera GF. Lumbar facet joint injection in low back pain and sciatica; description of technique. *Radiology* **1980**;137:661-664

U.S. Postal Service STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION <small>(Required by 39 U.S.C. 3685)</small>		
1A. TITLE OF PUBLICATION AJNR-American Journal of Neuroradiology		1B. PUBLICATION NO. 0 1 9 5 6 1 0 8
3. FREQUENCY OF ISSUE Bimonthly		2. DATE OF FILING 10/1/85
4. COMPLETE MAILING ADDRESS OF KNOWN OFFICE OF PUBLICATION (Street, City, County, State and ZIP+4 Code) (Not printers)		3A. NO. OF ISSUES PUBLISHED ANNUALLY 6
428 East Preston Street, Baltimore, Maryland 21202		3B. ANNUAL SUBSCRIPTION PRICE \$85.00
5. COMPLETE MAILING ADDRESS OF THE HEADQUARTERS OF GENERAL BUSINESS OFFICES OF THE PUBLISHER (Not printers)		
428 East Preston Street, Baltimore, Maryland 21202		
6. FULL NAMES AND COMPLETE MAILING ADDRESS OF PUBLISHER, EDITOR, AND MANAGING EDITOR (This item MUST NOT be blank)		
PUBLISHER (Name and Complete Mailing Address) Williams & Wilkins, 428 E. Preston St., Baltimore, MD 21202		
EDITOR (Name and Complete Mailing Address) Juan M. Taveras, M.D., Editor, Massachusetts General Hospital, Boston, MA 02114		
MANAGING EDITOR (Name and Complete Mailing Address)		
7. OWNER (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given. If the publication is published by a nonprofit organization, its name and address must be stated.) (Item must be completed.)		
FULL NAME		COMPLETE MAILING ADDRESS
American Roentgen Ray Society		Dr. Raymond Gagliardi
		880 Woodward Ave
		Suite 105
		Pontiac, MI 48053
8. KNOWN BONDHOLDERS, MORTGAGEES, AND OTHER SECURITY HOLDERS OWNING OR HOLDING 1 PERCENT OR MORE OF TOTAL AMOUNT OF BONDS, MORTGAGES OR OTHER SECURITIES (If there are none, so state)		
FULL NAME		COMPLETE MAILING ADDRESS
NONE		
9. FOR COMPLETION BY NONPROFIT ORGANIZATIONS AUTHORIZED TO MAIL AT SPECIAL RATES (Section 421.12 DMM only) The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes (Check one)		
(1) HAS NOT CHANGED DURING PRECEDING 12 MONTHS <input checked="" type="checkbox"/> (2) HAS CHANGED DURING PRECEDING 12 MONTHS <input type="checkbox"/> (If changed, publisher must submit explanation of change with this statement.)		
10. EXTENT AND NATURE OF CIRCULATION (See instructions on reverse side)		AVERAGE NO. COPIES EACH ISSUE DURING PRECEDING 12 MONTHS
A. TOTAL NO. COPIES (Net Press Run)		4233
B. PAID AND UNPAID CIRCULATION *SEE LINE 11 1. Sales through dealers and carriers, street vendors and counter sales		123
2. Mail Subscription (Paid and/or requested)		3249
C. TOTAL PAID AND/OR REQUESTED CIRCULATION (Sum of 10B1 and 10B2)		3372
D. FREE DISTRIBUTION BY MAIL, CARRIER OR OTHER MEANS SAMPLES, COMPLIMENTARY, AND OTHER FREE COPIES		81
E. TOTAL DISTRIBUTION (Sum of C and D)		3453
F. COPIES NOT DISTRIBUTED 1. Office use, left over, unaccounted, spoiled after printing		780
2. Return from News Agents		NONE
G. TOTAL (Sum of E, F1 and 2—should equal net press run shown in A)		4233
ACTUAL NO. COPIES OF SINGLE ISSUE PUBLISHED NEAREST TO FILING DATE		4100
11. I certify that the statements made by me above are correct and complete		
SIGNATURE AND TITLE OF EDITOR, PUBLISHER, BUSINESS MANAGER, OR OWNER <i>[Signature]</i>		*NOTE: Paid subscribers mailed via Canada Post