A Case of Central Posterior Epidural Cyst Associated with Baastrup's Disease Punctured Percutaneously Using Fluoroscopy with a Good Outcome

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Interspinous bursal cyst formation associated with Baastrup's disease is considered to be less common (<10%)[1)], and posterior epidural extension of an interspinous bursal cyst is extremely rare (<1%)[2)]. This epidural cyst rarely causes symptomatic spinal stenosis that may require surgical treatment[2)]. Although approximately 20 cases of surgical treatment have been reported[2-5)], there have been no reports of good clinical and radiological outcomes with percutaneous treatment using fluoroscopy. This is the first case report worldwide of posterior epidural extension of an interspinous bursal cyst associated with Baastrup's disease treated percutaneously using fluoroscopy that exhibited immediate improvement in terms of clinical symptoms and imaging findings. Consent has been obtained from the patient himself to make this case into a paper.

An 84-year-old man was referred to our hospital for pain from the buttocks to the back of the thigh, with weakness of the right lower extremity. Manual muscle test revealed no evident muscle weakness. Tenderness was found near the lumbar spinous process. The anterior-posterior view on the lumbar X-ray, revealed scoliosis with slight right convexity, and the lateral view revealed degeneration, disk narrowing, and kyphosis involving multiple vertebrae (Fig. 1). Furthermore, lumbar magnetic resonance imaging (MRI) confirmed canal stenosis in the T11/T12, L2/L3, 3/4, and severe L4/L5 canal stenosis from the central posterior epidural extension of an interspinous bursal cyst (Fig. 2). The L4/L5 interspinous bursal cyst and posterior epidural extension of the interspinous bursal cyst were punctured and aspirated by fluoroscopy to relieve pain and avoid surgical treatment. The interspinous bursa was imaged when a contrast agent was injected into the site where the epidural cyst was expected to be located (Fig. 3A). In this state, about 2 cc of mucoid aspirate was aspirated, and during aspiration, a clear blood aspirate was obtained; therefore, the procedure was discontinued (Fig. 3B). No postoperative complication was observed.

On the following day, the pain from the buttocks to the back of the thigh had almost disappeared, and his walking ability improved to the same level as before the pain increased. MRI, which was performed on the day after centesis and aspiration, revealed that both the interspinous bursal cyst and epidural cyst had almost disappeared (Fig. 4). We are currently following up for 4 months after the fluoroscopic puncture, and no symptom aggravation has been observed.

At present study, although approximately 20 cases of symptomatic extradural cyst associated with Baastrup's disease have been reported[2-5)], majority were surgically treated. However, surgical treatment requires general anesthesia, is associated with the risk of complications, and is expensive. Contrarily, Breed et al.[6)] percutaneously punctured the cyst under CT guidance, which resulted in good clinical and imaging outcomes. However, orthopedic surgeons and spinal surgeons are unfamiliar with the procedure and require the assistance of radiologists. Therefore, the exposure dose of the surgeons is expected to increase. International Commission on Radiological Protection report that the equivalent

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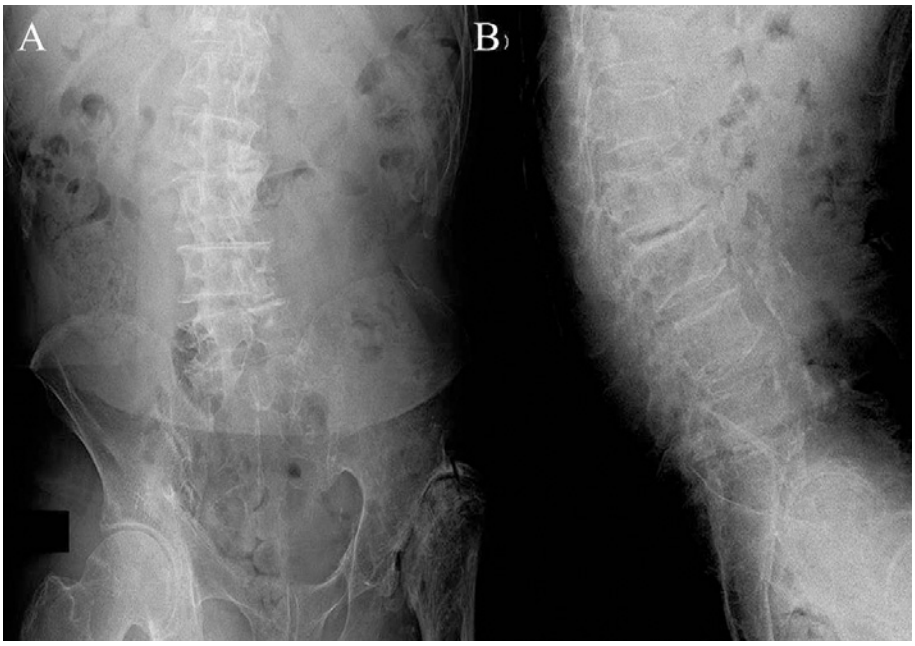

Figure 1. The anterior-posterior view revealed scoliosis with slight right convexity, and the lateral view revealed degeneration, disk narrowing, and kyphosis involving multiple vertebrae.

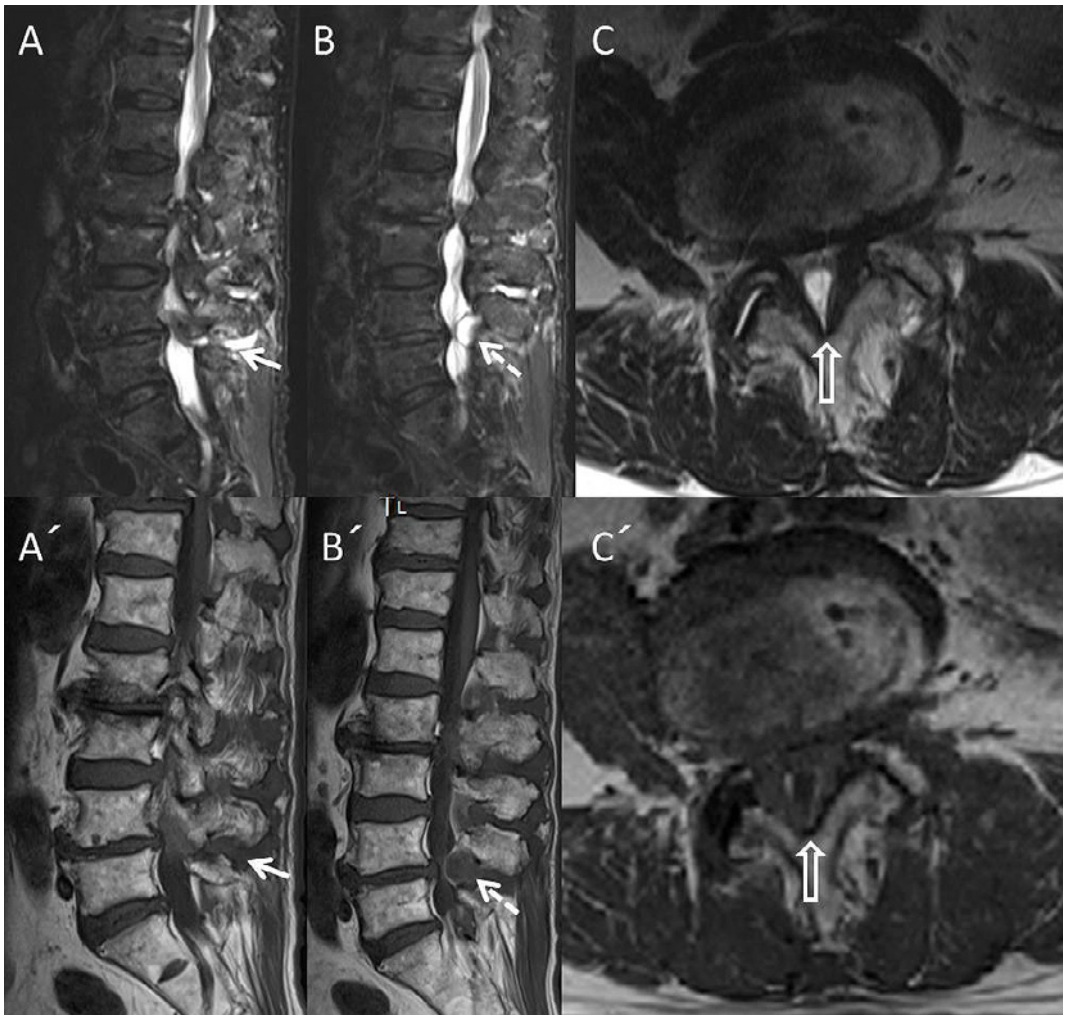

Figure 2. A, B, C: T2-weighted images in MRI. A', B', C': T1-weighted images in MRI.
An interspinous bursitis (arrow) and a large central posterior epidural cyst causing spinal stenosis. (dotted arrow, empty arrow)

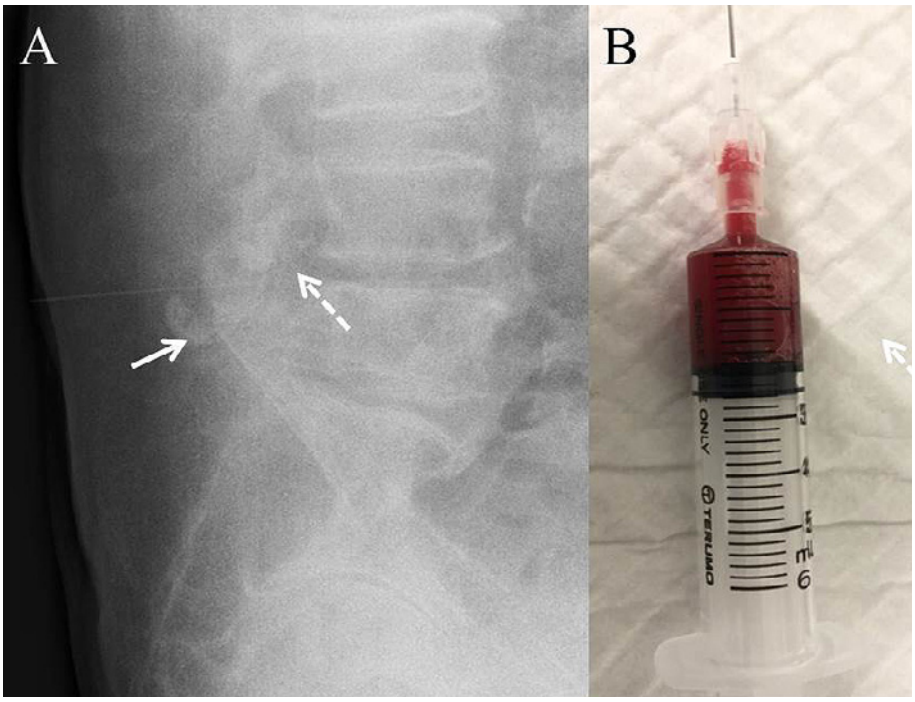

Figure 3. A: Interspinous bursa (arrow) and epidural cyst (dotted arrow) were imaged by injection of contrast agent. B: About 2 cc of mucoid aspirate was aspirated, and during aspiration, a clear blood aspirate was obtained.

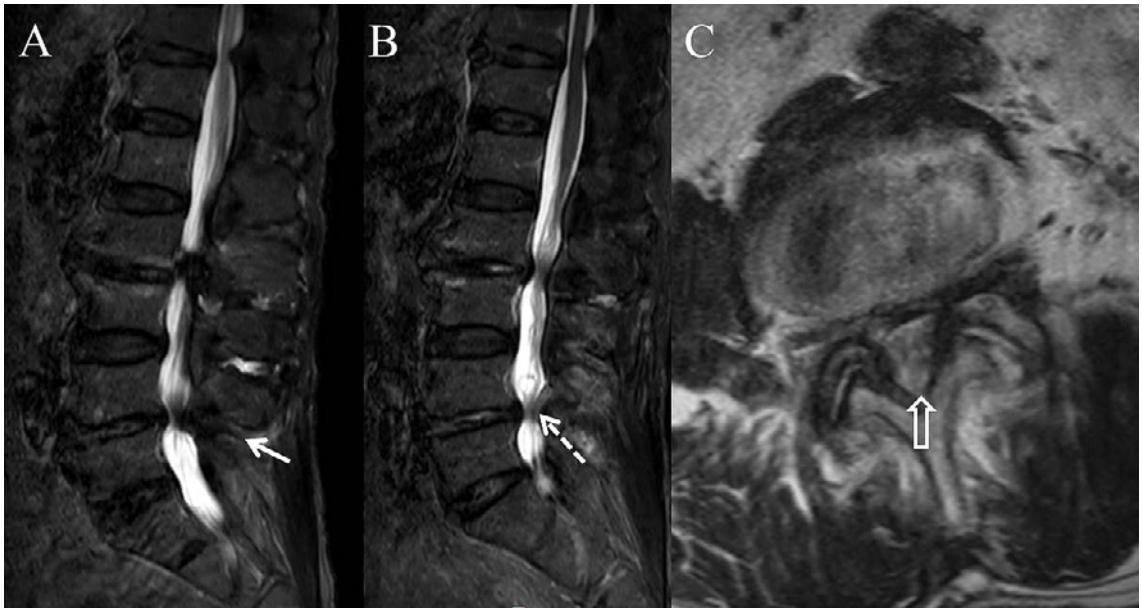

Figure 4. Both the interspinous bursal cyst and epidural cyst had almost disappeared. (arrow, dotted arrow, empty arrow)

dose limits are 500 mSv/year for the fingers[7]. Loisel et al. reported that the radiation exposure dose of the fingers was 4.75 mSv after 182 cases of fluoroscopic surgery[8]. Kato et al. also pointed out that, under CT fluoroscopy, if a finger directly enters the X-ray beam range, it may exceed the annual equivalent dose limit of 500 mSv in about 7 min[9].

Considering these findings, we believe that it is worthwhile to attempt percutaneously treatment once via fluoroscopy for symptomatic extradural cyst associated with Baastrup's disease in order to attempt it once to relieve pain and avoid surgical treatment.

Conflicts of Interest: The authors declare that there are no relevant conflicts of interest.

Ethical Approval: N/A

Author Contributions: Satoshi Baba wrote and prepared

the manuscript, and all of the authors participated in the study design. All authors have read, reviewed, and approved the article.

Informed Consent: Informed consent was obtained from the patient in this study.

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