

Images in Infectious Diseases

Histopathological findings of nucleus pulposus in lumbar brucellar spondylodiscitis

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From November 2012 to March 2016, lumbar nucleus pulposus tissues were acquired from 30 patients with brucellar spondylodiscitis (BS) during surgical treatments. The histopathology of the nucleus pulposus tissues was assessed using hematoxylin and eosin (HE), acid-fast, periodic acid–Schiff (PAS), Gomori methenamine silver (GMS), and Giemsa staining. HE-stained sections showed that the nucleus pulposus had begun to crinkle, and extracellular matrix had decreased; however, collagen fibrils had begun to grow, thicken, and arrange themselves more irregularly in the matrix. The number of viable and necrotic cells decreased and increased, respectively. We also further confirmed that the tissues we acquired comprised just the nucleus pulposus, and not the annular fibrosus or transition zone (**Figure 1**). Furthermore, acid-fast staining showed no positive acid-fast bacillus (**Figure 2 a1 and a2**); PAS and GMS staining showed no positive fungi (**Figure 2 b1, b2, c1, and c2**); and Gram staining showed no positive bacteria (**Figure 2 d1 and d2**). However, 26/30 (86.7%) Giemsa-stained tissues were positive for *Bacillus brevis* (**Figure 3**). Histopathological

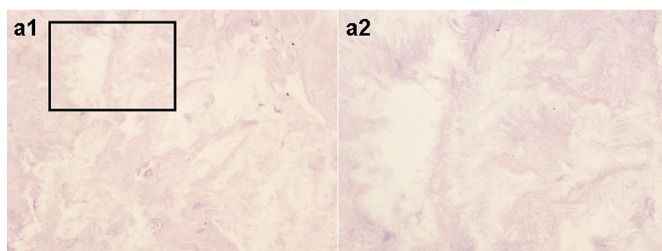


FIGURE 1: Hematoxylin and eosin staining showed that the extracellular matrix had decreased, while collagen fibrils had begun to grow and become more irregularly arranged among the matrix ($\times 200$ and $\times 400$).

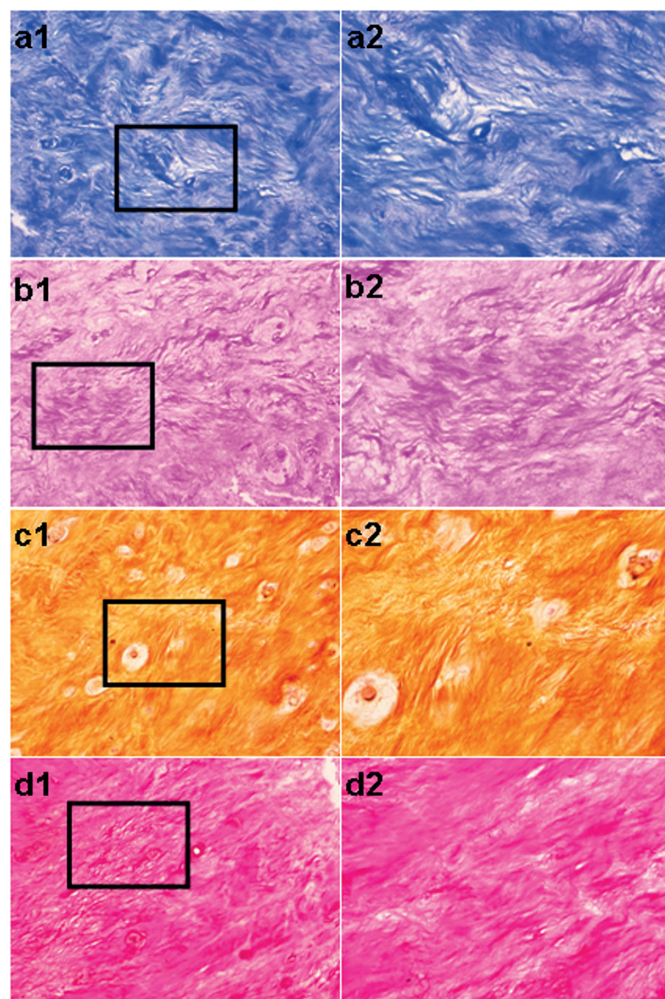


FIGURE 2: Acid-fast staining showed no positive acid-fast bacillus (a1 and a2, $\times 200$ and $\times 400$); periodic acid–Schiff staining showed no positive fungi (b1, b2, $\times 200$ and $\times 400$); gomori methenamine silver staining showed no positive fungi (c1 and c2, $\times 200$ and $\times 400$); and Gram staining showed no positive bacteria (d1 and d2, $\times 200$ and $\times 400$).

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Received 17 March 2018

Accepted 18 July 2018

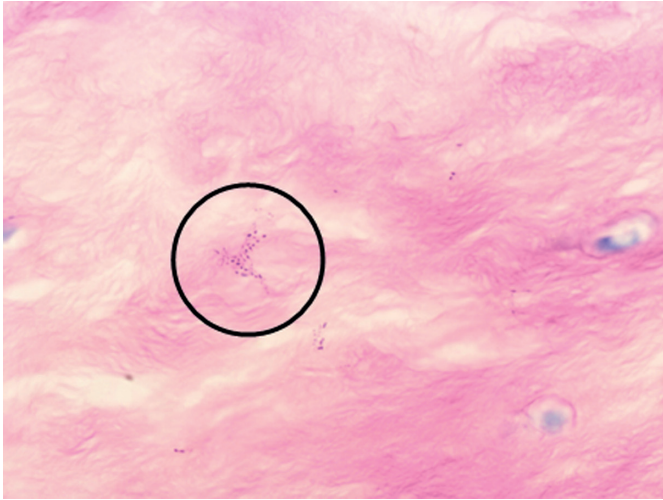


FIGURE 3: Giemsa staining showed *Bacillus brevis* with aggregated distribution ($\times 1000$).

examinations of nucleus pulposus of lumbar BS revealed characteristic features that are helpful for clinical diagnosis. Therefore, histopathological examinations should be considered

as the main investigation method of choice for the diagnosis and management of BS, although conventional histopathological examinations show some difficulties in discriminating acute and other chronic forms of spondylodiscitis¹⁻³.

Acknowledgments: This research was funded by the science foundation of Beijing Ditan Hospital Capital Medical University (No.DTQL201803).

Conflict of interest: The authors declare that there is no conflict of interest.

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