

## A Preliminary Study to Detect the Presence of Bacteria in Lumbar Disc Herniation

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### Abstract

Bacterial biofilm in lumbar discs worsens pain by attracting inflammatory cells. Study aims to detect bacteria in herniated discs of patients undergoing lumbar microdiscectomy. Discs (n=23) were collected, into cooked meat media, and brain heart infusion broth for anaerobic and aerobic bacterial isolation respectively. Other portion of the disc was sonicated using a stomacher machineto dislodge the existing biofilm structure and incubated under anaerobic conditions. To rule out contamination skin scrapings and muscle biopsies of the respective patient were processed. Aerotolerance test was performed for positive anaerobic culture. Aerobic subculture was performed in primary culture plates. Gram stain was used to screen, and biochemical identification tests were used for presumptive identification. Mean age was  $44.17 \pm 16.63$  years where 65.22% were males. All were immunocompetent and had not undergone epidural steroid injections or corticosteroids. Among the positive microbial cultures (n=14), 11 were anaerobic (01 strict anaerobe and 10 facultative anaerobes) with few showing polymicrobial growth(two different species). Two discs produced growth in both aerobic and anaerobic cultures whereas one disc was positive for aerobic culture only. The aerobic cultures were identified as *Acinetobacter spp*, Coagulase negative *Staphylococcus spp.* and *Corynebacterium spp.* Among the anaerobic positive cultures five contamination markers showed positive growth , but similar colony morphology generated in disc was not observed. Nine discs had no growth. Culture methods confirm the presence of bacteria in the excised disc. Higher resolution methods will enhance identification of specific bacterial species.

**Keywords:** *Disc herniation, Bacterial culture*