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Culture-based screening of aerobic microbiome in diabetic foot subjects and developing non-healing ulcers

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The study was carried on diabetic foot patients to deduce clinical attributes, the occurrence of the range of aerobic microbial flora and to assess their comparative *in vitro* susceptibility to the customarily used antimicrobials. We also studied the potential risk factors involved in the development of non-healing ulcers. A total of 87 organisms were isolated from 70 specimens, including *Escherichia coli* (19.5%) among the Gram-negative and *Staphylococcus aureus* (18.4%) among the Gram-positive as the predominant aerobes explored. *Pseudomonas aeruginosa* and *Escherichia coli* were predominant isolates of non-healing ulcers. The antimicrobial sensitivity pattern revealed that vancomycin (100%) and amikacin (90.4%) exhibited highest sensitivity to Gram-positive cocci, while all strains of *Pseudomonas aeruginosa* were sensitive towards imipenem (100%). The prevalent uncontrolled glycemic status, altered lipid spectra, the existence of neuropathy and peripheral vascular disease, suggested predisposition towards the development of non-healing lesions. The study has underlined the need for continuous surveillance of bacteria and their antimicrobial sensitivity blueprints to provide the basis for empirical therapy and to minimize the risk of complications. Further, stringent clinical evaluation and medical history will help in revealing the risk of developing non-healing status in diabetic foot ulcers.

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Surgical decompression of painful diabetic peripheral neuropathy: The role of pain distribution and characterization

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Objective: The objectives are to investigate the effect of surgical decompression on painful diabetic peripheral neuropathy (DPN) patients and discuss the role which pain distribution and characterization play in the management of painful DPN as well as the underlying mechanism involved.

Methods: A total of 306 patients with painful diabetic lower-extremity neuropathy were treated with Dellon surgical nerve decompression in our department. Clinical evaluation including visual analogue scale (VAS), brief pain inventory for diabetic peripheral neuropathy (BPI-DPN) questionnaire, two-point discrimination (2-PD), nerve conduction velocity (NCV) and high-resolution ultrasonography (cross-sectional area, CSA) were performed in all cases preoperatively, and at 6 month intervals for 2 years post-decompression. The patients who underwent surgery were retrospectively assigned into two subgroups (focal and diffuse pain) according to the distribution of the diabetic neuropathic pain. The control group included 92 painful DPN patients without surgery.

Results: The levels of VAS, scores in BPI-DPN, 2-PD, NCV results and CSA were all improved in surgical group when compared to the control group ($P < 0.05$). More improvement of VAS, scores in BPI-DPN and CSA was observed in focal pain group than that in diffuse group ($P < 0.05$).

Conclusions: Efficacy of decompression of multiple lower-extremity peripheral nerves in patients with painful diabetic neuropathy was confirmed in this study. While both focal and diffuse group could benefit from surgical decompression, pain relief and morphological restoration could be better achieved in focal group.

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