Tissue Biopsy in Infected Foot and Ankle Surgery: Do We Need a New Scalpel for Each Sampling Sites?

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Introduction/Purpose: When performing surgical debridement to treat chronically infected orthopaedic cases our unit routinely samples 5 intraoperative specimens for microbiology. Best practice and achieving accurate sampling would suggest that a new scalpel and forceps for each sampling site would yield the most valid results. The alternate option would be to use the same instruments. The aim of this prospective study was to compare the two techniques in treating infected foot and ankle cases.

Methods: Ten consecutive patients undergoing debridement for foot and ankle infection were prospectively included. Both techniques were performed on same patient to minimise any bias related to the type of host and severity of infection. This was achieved by collecting 5 tissue samples from 5 different sites initially using fresh instruments for each. We then used the first scalpel and forceps to sample the 2nd, 3rd, 4th, and 5th sites again. Samples were labelled from 1 to 9 where the 6th to 9th samples were from the same sites as the 2nd to 5th samples but taken by different technique. This allowed differentiating a genuine growth at a particular site from a contaminant carried on from another site.

Results: In 7 patients the scalpel transferred microorganisms from one site to another as some of the 5 sites showed no organisms when biopsied by fresh instruments but showed growth when sampled by the re-used first scalpel. In the remaining 3 patients, the growth form the sites sampled by re-used first scalpel was consistent with the growth from those sites when sampled by fresh instruments.

Conclusion: Our preliminary results showed that fresh scalpel and forceps are required for each sampling site to avoid transferring contamination from one site to another. This helps guide the extent of future debridement and also the type of antibiotics to be used.