Free Papers G

[O96] INTRAOPERATIVE MICROBIOLOGICAL INVESTIGATION IN PROSTHETIC JOINT INFECTIONS – SONICATION BRINGS ADDED VALUE BUT IS NOT A SUBSTITUTE FOR TRADITIONAL SAMPLING

Pedro Neves[1], Pedro Serrano[2], Pedro Barreira[1], Marta Silva[1], Pedro Santos Leite[1], Ricardo Sousa[3]

[1]Centro Hospitalar Do Porto, Porto, Portugal
[2]Department of Orthopaedics, Centro Hospitalar Do Porto – Hospital de Santo António, Porto, Portugal
[3]Department of Orthopaedics, Centro Hospitalar Do Porto – Hospital de Santo António, Hospital Privado de Alfena, Porto, Portugal

Aim: Diagnosing prosthetic joint infections(PJI) is sometimes difficult. Being able to identify the bacteria involved in intraoperative samples is an essential diagnostic criterion.
There are however some cases in which the traditional cultures are not capable of providing a definitive diagnosis. In this regard, implant sonication has emerged as a complementary test.
The aim of this study was to analyze the results of microbiological studies obtained with and without implants sonication, in order to understand its real contribution to diagnosis.

Method: We retrospectively evaluated all cases of infected total hip or knee arthroplasty surgically treated between January 2009 and December 2013. The definition of infection met the criteria set out recently in the international consensus meeting.
The number and type of bacteria identified in each patient and the type of microbiological study made were registered.
Two different groups were created, with and without sonication, and the results were compared.

Results: In a total of 93 patients with PJI, there were only three cases (3.2%) in which we failed to isolate any microorganism. In the 41 cases in which sonication was not used, 54 different microorganisms (an average of 1.32 per patient) were found and no microorganism was found in two cases (4.9%).
In the 52 patients in whom sonication was used, we identified 74 different microorganisms (an of average 1.42 per patient) and only one case (1.9%) of negative cultures. In 25 patients (27 microorganisms) there was complete correspondence between the findings of sonication and traditional tissue culture. In 22 cases, 34 different microorganisms were found in tissue samples and sonication offered negative cultures. On the other hand, there were four patients in with 13 microorganisms were identified in sonication with negative tissue cultures.

Conclusions: An analysis made in our institution several years ago, showed a percentage of culture negative PJI of almost 20%. Since then, several changes have been introduced in our clinical practice. Of these, sonication, whose value has been amply demonstrated in the literature, is the most demanding in terms of logistics.
The authors believe that the implementation and especially the widespread adoption of simple rules for proper sampling is effective for a significant reduction in cases where it is not possible to isolate any microorganism in PJI's. We believe sonication should be seen as an additional diagnostic tool that contributes to increasing sensitivity but should not be considered a substitute for traditional study.