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A COMPARISON OF ROUTINE AND RAPID MICROWAVE TISSUE PROCESSING IN HISTOPATHOLOGICAL TISSUE EXAMINATION

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Background:

Routine tissue processing technique performed in pathology laboratories requires an overnight schedule for optimal processing. However, microwave processing permits a more rapid procedure, allowing earlier histopathologic diagnosis. In this study, we compared the quality of microwave-processed tissue, using the Rapid Microwave Histoprocessor (RHS-1), and tissues processed using the standard method (i.e. with Leica TP-1020).

Materials and methods:

A total of 25 paired tissue samples were collected from tonsil, appendix, uterus, breast and prostate. One member of the pair was processed routinely overnight, while the other was processed by the rapid microwave technique. The slides were then stained for routine hematoxylin and eosin (H&E), Periodic Acid Schiff (PAS) and immunohistochemistry using cytokeratin, leucocyte common antigen and Ki67 antibodies. The slides were then compared for quality of histologic preparation in a blinded fashion by two pathologists and were given a score of 1 to 3.

Results:

Our results showed that the H&E stained slides showed good architecture and cell morphology with microwave-processed tissue in 21/25 samples (84%) while the standard method has 23/25 (92%) good results. The immunohistochemical staining showed good result in 10/16 samples (63%) and 11/16 samples (69%) of microwave-processed tissue and the standard method-processed tissue respectively. PAS stained slides show an equally good results in both microwave-processed tissue and the standard method (1/1 sample). All the staining techniques have shown satisfactory and comparable results for both histoprocessor.

Conclusions:

It can be concluded that tissues processed by rapid microwave technique produce equally good quality tissue sections with the added advantage of a faster turnaround time. This procedure would be useful for specimens that require rapid and urgent diagnosis.

Keywords:

histoprocessor, rapid microwave processing, histopathology