Facts of floater artifacts: A riddle

Sir,

Artifacts are a part of routine pathology practice. And indeed artifacts can be encountered from the time the tissue is taken for examination by microscopy to the final stage, i.e., when the slides are mounted for reporting. Artifacts are of many types. The crush artifact, sectioning artifact, and floater artifact are a few among a long list of artifacts.[1]

Floaters are types of artifacts which are seen while examining the tissue sections for final diagnosis. These are tissues which are essentially not a part of the tissue being examined. In other words, these are extraneous. Arising out of cross-contamination, these are a potential source of diagnostic error. When the extraneous tissue is malignant, there is a chance of misdiagnosis of cancer even where the original pathology is actually benign.[2]

In a study published by Layfield *et al*. in the American Journal of Clinical Pathology, floaters were found to occur in 0.01–1.2% of slides.[2] Floaters can be both fascinating and frightening. Particularly in small tissue biopsies they pose a problem. Any unrelated tissue would usually be detected by an alert pathologist. But if the floaters are derived from the same organ as that originally biopsied, then even for astute pathologists, identification becomes difficult. In these cases, eventually molecular methods of diagnosis may help in solving the riddle.

The cross-contamination of extraneous tissue can occur at the time of grossing of specimens or at the time of processing. Therefore, it is essential to give attention to each specimen individually and maintain clean grossing board, instruments, etc. Some simple measures like maintaining a gross register with diagrams of the tissue sections while grossing can help one to go back and check again to detect the error if any. Also not giving sequential numbers to specimens from the same organ at the time of receipt of the specimen itself, may help to minimize error. During the processing of the tissue also, there is a chance of contamination. In their study, Layfield *et al*. have described water bath contamination, as the most common source of origin of floaters.[2]

To identify floaters, Layfield *et al*. have suggested that mismatch of part of the tissue with the main specimen tissue type and the presence of this discordant tissue in a single level are the clues which point toward the extraneous nature of the floater.[2]

So pathologists should be alert and aware about potential contamination of especially small tissues by floater artifacts. They should rule out any such possibility and check all available information (clinical and imageological) before rendering any unusual diagnosis. The riddle of floaters can be solved by an alert team of pathologists and laboratory technicians.

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