Journal of Gastroenterology, Hepatology and Endoscopy

Perspective
Published: 14 Sep, 2017

Endoscopic Duodenal Mucosal Biopsy – A Pathologist's Perspective

*Kim Vaiphei**

Department of Histopathology, Post Graduate Institute of Medical Education and Research, India

Perspective

Duodenal biopsy is very frequently carried out technique in routine practice for various purposes including Celiac Disease. The parameters I will like to know while examining such a biopsy are the clinical details including presenting symptoms and investigative findings including serology reports. Endoscopists usually make a mention of the endoscopic findings in duodenal mucosa which usually read as presence of mucosal scalloping, grooving, nodules, erosions, ulcer or loss of vascular pattern. The biopsy is usually mounted on filter paper with the scope of improving the orientation and better visualization of the crypt and villous architecture. It is worth to mention at this point the important role play by the technical staff in processing and handling of filter paper mounted biopsy specimens. The technician needs to have knowledge how to handle such biopsy while grossing and tissue embedding in paraffin blocks. With the gradually decreasing in the size of the sized scope which is used, majority of mucosal biopsies are just about 3 mm to 5 mm in sizes and may not be feasible to mount them properly on the filter paper by the endoscopist. A biopsy may be labeled as well oriented if at least four or five of the adjacent crypts are visible in full length, irrespective of presence of muscularis mucosae or not. If the biopsy is not well oriented, the next question will be – what will the histopathologist do with the biopsy? Does he write out the report as not interpretable due to poor orientation of the biopsy, or will she or he make an effort to interpret the biopsy in the simplest and the best ways possible? For myself, I will choose the second option so that my report may be of some value for the clinician in managing the patient.

Many times, the biopsies may not be ideal for interpretation, but I have found a way of reading such not very perfect biopsies to near perfection. Under the light microscope, first of all I look for the number of the mucosal fragments, their sizes and the orientation. Superficial and tiny biopsy may be ignored. In a poorly oriented biopsy, where the long crypts are not visible, but the crypts have been replaced by transversely and tangentially or obliquely cut glands. There may not be any obviously visible villiform structure, rather replaced by transversely and or tangentially cut villi with the surface lining epithelium. Frequently, step serial sections in such a situation may be of immense help, which may improve the orientation and few visible villi may appear over the surface, and one also gets to examine many more tissue fragments of the biopsies in the ribbon sections. Histological changes in any mucosal inflammatory condition, will involve the surface and crypt lining epithelial cells and the lamina propria component. Histological changes in these microscopic structures take place side by side, and never alone. Light microscopy gives a two dimensional view to observer and it is of much immense help if one can visualize and imagine the morphological structures beyond the ones that are visible under the light microscopic lenses.

The following lines highlight the way my personnel approach in interpreting endoscopic duodenal biopsies:

1. First orienting oneself to the orientation of the biopsy. If not oriented properly, one should look for the presence of transversely or tangentially cut villi. Presence of such features will exclude any severe or significant degree villous atrophy.

2. Such tangentially or transversely cut villi may show variable degree of lamina propria expansion due to increase amount of inflammatory cells.

3. Next is to study the character of the surface lining epithelial cells status. Presence of any form of injury will result in depletion of the goblet cells associated with degenerative changes where there may cytoplasmic vacuolization, hyper-eosinophillia, loss of brush border (periodic acid Schiff stain highlights the brush border as positive band along the surface), increased in intra-epithelial lymphocytes, denudation of the surface lining epithelium, erosion with red cell exudates

OPEN ACCESS

Correspondence:
Kim Vaiphei, Department of Histopathology, Post Graduate Institute of Medical Education and Research, Sector 12, Chandigarh-160012, India, E-mail: kvaiphei2009@gmail.com

Received Date: *08 Aug 2017*
Accepted Date: *04 Sep 2017*
Published Date: *14 Sep 2017*

Citation:
Vaiphei K. Endoscopic Duodenal Mucosal Biopsy – A Pathologist's Perspective. J Gastroenterol Hepatol Endosc. 2017; 2(3): 1018.

or occasionally neutrophillic infiltration.

4. It is imperative to comment on the presence of any unsuspected parasite along the surface or within the lumen.

5. One may also comment on the presence of epithelial cell regeneration.

6. There may be thickening of the basement membrane, isolatedly or in association with other mucosal inflammatory changes including in celiac disease and other autoimmune conditions. We have observed in follow-up biopsies reduction or normalization of the thicken basement membrane in follow-up biopsies of patients who on gluten withdrawal.

7. The increased in lamina propria inflammation may be graded as mild, moderate or heavy mentioning the type of the inflammatory cells. The blood vessels, if any abnormality is visible, should be mentioned in the description and in interpretation.

8. Muscularis mucosae, if included in the biopsy and any abnormality is visible, comment may be made.

9. Rarely the submucosa may be included specially if it is involved by the ongoing disease process, may be of much help for a definitive diagnosis.

10. Any small vessel vasculitides, it is the capillaries and the venules present in between the muscle bundles that are involved, giving an enhanced focal inflammation in the muscularis layer with swollen endothelial cells. In such situation, one may try tracing the involved vessels to lamina propria.