

The contribution of mucosal biopsies to the diagnosis of infectious diseases of the digestive tract.

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Infections of the digestive tract are a major cause of disease and mortality worldwide. The contribution of biopsy pathology to their diagnosis is marginal but can be helpful. Some infections can be confidently and rapidly recognized in histological slides by identifying the responsible microorganisms. Others can be strongly suspected because of a characteristic histological reaction pattern as is the case with cytopathic viral changes, Whipple's disease, typhoid fever or pseudomembranous colitis. The usual granulocytic, granulomatous or eosinophilic response of the mucosa to infection is however nonspecific and may at best suggest that possibility.

The search of microorganisms is supported by the classic four additional special stains Gram, Ziehl-Neelson, Warthin-Starry and Grocott and their modifications. The possibility of specific diagnosis has moreover greatly been increased by PCR, in situ hybridisation and immunohistochemistry, a possibility that should always be kept in mind where it is available and applicable to paraffine embedded tissue,

Oesophagus and stomach are relatively resistant to infection with the notable exceptions of candidal and viral oesophagitis (mostly HSV and CMV), *Helicobacter pylori* gastritis and gastric infection by species of so-called NHPH (Non-H.p. *Helicobacter*), e.g. *H.heilmannii*.

In duodenal biopsies Giardiasis and Whipple's disease should not be overlooked.

Enterocolitis of bacterial and viral origine usually show the nonspecific appearance of an acute, self-limiting inflammation. They come almost only to the attention of the pathologist, when their course is severe or protracted and ulcerative colitis and Crohn's disease must be excluded.

If a granulomatous component accompanies the inflammation Mycobacteria, *Yersinia*, Chlamydia and fungi should be considered beside noninfectious causes.

CMV should always be searched for in steroid resistant flare-ups of ulcerative colitis.

A history of recent travel may hint to the possibility of finding *Entamoeba histolytica* or eggs of *Schistosoma*.

In the immunocompromised patient unusual infections and unusual reaction patterns must be expected. Intestinal spore forming protozoa (*Sporozoa* and *Microspora*), CMV, atypical mycobacteria (*Pseudowhipple's* disease), fungi, *Chlamydia* and *Strongyloides stercoralis* may all profit from immunodeficiency. Biopsy is particularly useful in aggressive fungal infections, when rapid diagnosis cannot be achieved by other methods.

Finally also eggs, larvae or adult specimens of helminths are occasionally encountered in biopsy material and remind the pathologist how very successful and widespread parasites they are.