Endoscopic and histopathological changes in upper gastrointestinal tract of patients with COVID – 19: case series and literature review.

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Background and purpose

Various digestive symptoms and endoscopic features have been observed in patients with COVID – 19 infection. However, reported histopathological changes in the GI tract are still scarce. Herein, we describe 3 COVID – 19 cases with digestive manifestations that demonstrated specific histopathological changes in the upper GI tract. We also provide an overview of various digestive histopathological features in COVID – 19 disease.

Methods

Histological examination of endoscopic biopsy samples from 3 patients was performed in our institution. Biopsy specimens were taken from the duodenum in one patient and from the esophagus in 2 patients. Besides, a literature search was conducted using PubMed, Hinari and Google search for original and review articles. English papers from December 2019 to May 2022 were included.

Results

In our patients, histological features were more specific. Duodenal mucosal samples demonstrated several viral cytopathic effects associated with epithelial damage, numerous microthrombi and positive immunostaining for COVID-19 on various enterocytes. Esophagus samples showed similar features, characterized by enlarged cells with vacuolated cytoplasm and large smudged nuclei. According to our literature review, digestive histopathological changes have been reported in 21 cases of COVID-19 patients. Pathological findings were generally nonspecific in all these cases and ranged from epithelial damage, lymphoplasmacytic and macrophages infiltrates, prominent endothelitis and ischemic enterocolitis.

Conclusion

Histological analysis is not a practical option for the diagnosis of SARS – CoV – 2 infections but could help to elucidate pathologic changes and pathogenesis of the disease.