Summary

The present study was designed to distinctive anatomical and histological structures of the duodenum in adult male indigenous one humped camel. Forty specimens of the duodenum of healthy male camels aging (4-5) years, weighted (350-500) kg were utilized immediately after slaughtering. Fifteen specimens were used for the anatomical study, each duodenal specimen was divided into duodenal ampulla (mean it length was (10.3 ± 2.9) cm) and equal five parts, named as following (first, second ,third ,fourth and fifth parts), mean length of each part was (42.44 ± 5.402) cm. Ten specimens were used for study of the blood supply. Fifteen specimens for the histological study, ten specimens was taken from different regions of the ampulla and from each part of the duodenum,and fixed by 10% formalin or Bouin's solution, then treated by routine histological technique .The sections were stained by, H&E , PAS and V.G. stains .

Anatomically, mean length of small intestine of the adult camel was(3250 ± 247) cm, and their weight after removed of the contents and mesenteries(5900 ± 1816) g. The mean length of the camel duodenum was (222.2 ± 27.01) cm and it weight (444.6 ± 32.6) g, has convolutions of the bowel, the duodenum was extend on the visceral surface of the liver, then on the visceral surface of the rumen and ended with duodenojejunal flexure. The hepatopancreatic (common) duct enter the duodenum at distance (40.73 ± 3.41) cm from the pylorus, the mean of weight , diameter of the duodenal lumen and duodenal wall thickness in camel duodenal parts were decreased toward the jejunum .

The blood supply of duodenum comes from both the cranial pancreatico duodenal and gastroduodenal branches of the common hepatic artery and the cranial mesenteric artery via the caudal pancreaticoduodenal branch.

Histologically , the duodenal wall was composed of four tunicae (mucosa, submucosa, muscularis and serosa) , mean thickness of mucosa in second part was greater than that in other parts ,but lesser in first part ,the tunica mucosa consist of epithelium , lamina propria and muscularis mucosa .The duodenal lumen lined by simple columnar epithelium with prominent goblet cells ,mean thickness of epithelium in first part was more than that in other parts, mean height of villi, their thickness and height the cells that lined those were decrease toward of last parts, and second part have longer villi than that of other parts.

Crypts of Lieberkuhn were simple, tubular invaginations opened adjacent to the bases of the villi.The mean number and length of these crypts in fifth part were more than that in other parts ,the goblet cells have globular shape , paneth cells were granular cells , mean number of goblet and paneth cells in these crypts were increase toward last parts .Muscularis mucosa, consisted of very thin two layers of inner circular and outer longitudinal smooth muscles, the greater thickness of the muscularis mucosa was in first part, but in fifth part contained of just a single layer of smooth muscle .The submucosa consists of dense a irregular connective tissue, mean of its thickness was increased toward the fifth part, also showed the circular folds in this part more size and frequency than that in other parts .

Brunner’s glands showed as branched tubuloalveolar glands found in the lamina propria of first, second and third parts and as well as in submucosa of all duodenal parts, mean number and diameter of alveoli of Brunner’s glands in submucosa were decrease toward the last parts and absent in last sections of fifth part toward of the jejunum .The muscular coat consists of internal circular and external longitudinal layers of smooth muscles, mean their thickness decreased toward the last parts. The serous coat, a thin layer of loose connective tissue, mean it thickness decreases toward the last parts.