



**ON SOME ASPECTS IN ULTRASONOGRAPHY
OF THE UPPER ABDOMEN**

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Ultrasonography (US) has become very important in the diagnostic procedures as non-invasive and highly informative and more and more is applied as prime instrumental method in abdominal investigation. In routine application on an empty stomach sometimes gas collection compromises the study of pancreas and its surrounding structures. This requires other expensive and invasive methods. Recently, US is used for assessment of the gastric emptying. We aim at determining the effectiveness of some methods for pushing out the gases from the stomach and duodenum making ultrasound window to the structures and at studying the possibilities for US assessment of gastric emptying. For a 10-year period more than 20000 patients undergo extracorporeal abdominal US. Routinely, gases did not allow visualization of the organs and are aspirated from the stomach and duodenum through probe or pushed out with fluid introducing. Gastric emptying is evaluated with introducing a fluid food, too. Cases with proved operative and autopsy diagnosis are analysed in details. The liver, gall-bladder, lien and kidneys are available for routine US. In 1047 patients pushing out the gases from stomach and duodenum was done. Statistic analyses of diseases with over 30 cases are shown on table 1. Routine diagnosis of choledocholithiasis is difficult due to the gases in the duodenum disposed over the distal part of the choledochus - in 89 of 194 patients with sensitivity (Se) of 45,9% and specificity (Sp) of 99,5%. We could introduce a probe in the duodenum in 55 of 67 patients. Right diagnosis after aspiration of the contents is done in 47 of them with Se (85,4%) and Sp (99,4%). With introducing a fluid in the stomach and the duodenum it is done in 59 of 96 patients with Se (89,4%) and Sp (99,6%). Pancreatic carcinoma is routinely found in 74 of 135 patients with Se (54,8%) and with introducing a fluid in 47 of 49 patients with Se (95,9%). Gas aspiration from duodenum does not allow optimal visualization of pancreas in all cases. While in adults pyloric stenosis is visualised rarely, in sucklings it is diagnosed in 41 of 42 patients (97,7%). Stomach carcinoma routinely is found in 196 of 404 cases with Se of 48,5%, after aspiration - in 42 of 159 with Se of 71,2% and with fluid in 123 of 151 cases with Se of 81,4% and Sp of 99,5%. For all patients routine study

allows exact diagnosis in 52%, after aspiration - in 75,3% and with fluid - in 87%. Table 1

U S	routine		Operation or autopsy after aspiration				
	+	-	+	-	+	-	
Cholelithiasis	+	89	4	47	1	59	1
	-	105	739	8	165	7	303
Pancreatic pseudocyst	+	53	2	5	1	15	
	-	3	989	1		1	
Chronic pancreatitis	+	17	1	23	1	8	1
	-	4	1025	7	180	1	
Pancreatic carcinoma	+	74	3	2	1	47	1
	-	61	909			2	320
Pyloric stenosis	+	57	1	27	2	44	1
	-	16	973	5	177	1	324
Gastric carcinoma	+	196	3	42	2	123	1
	-	208	640	17	147	28	218
Gastric ulcer	+	13		4		8	
	-	38	996	2		3	
Others	+	45	3	9	4	18	2
	-	68	931	12			5
Total	+	544	17	159	12	322	7
	-	503	486	52	95	48	267

Sign (+) means a correct diagnosis but sign (-) an incorrect one

The preoperative and postoperative information for gastric emptying is valuable for the practice because it is known that some complaints are connected with motor disturbances of antrum. A total of 43 patients were studied (15 healthy, 12 with antireflux operations and 16 with duodenal ulcer, 13 of which operated - 9 with proximal vagotomy and 4 with resection with truncal vagotomy), with US in real time with sagittal planometry of the antrum on aorto-mesenterial level with 300 ml standard fluid food bolus. Mid-time for semi-emptying of antrum in controls was 8,7 min. after proximal vagotomy - 11,6 min and after resection for ulcer - 9 min. In reflux it is preoperatively 15,8 min and after operation 10,5 min. According to some authors, there is a correlation between the results from US and scintigraphic assessment of the gastric emptying. In conclusion it can be accepted that US with fluid of the epigastric region improves the diagnostic possibilities of the method and enables the evaluation of gastric emptying.