This year 35 years have passed since one of the first Polish endoscopic laboratories in Surgery Clinic has been established. It undertook the idea popularised by professor Mikulicz – surgeon who performed the first endoscopy over a hundred years ago and described neoplastic changes within the stomach visible during this procedure. He also emphasized advantages for the related with the use of this method.

During these 100 years endoscopy had a turbulent history. From initial scepticism of doctors specializing in various domains, until today, when endoscopy is a commonly accepted standard in diagnostics and treating ailments of alimentary tract and abdominal cavity organs.

Progress visible in endoscopy during recent years results mainly from the introduction of more advanced instruments, and by the same new diagnostic and therapeutic techniques. The so-called interventional endoscopy, initially intra-ductal, it recently entered body cavities as laparoscopy. Hence the implemented endoscopy, which is more and more widely used in surgery leads to minimisation of operational injury and allows for earlier diagnosis and successful treatment of numerous diseases.

However, from the moment of accepting and valuing endoscopy as diagnostic and therapeutic method used in alimentary tract ailments, a heated discussion has raised concerning the specialization to which endoscopy belongs and who is more competent to perform it. Taking into consideration that competence means not only theoretical but also practical experience in diagnosing and conservative as well as operational treatment of alimentary tract diseases, then specialist in surgery after proper training on endoscopy is particularly competent to use endoscopic methods, especially the interventional ones, because of his operational experience and knowledge of the so-called surgical anatomy.

Therefore idea of professor Mikulicz, stating that endoscopy is closely related with surgery, should be continued.

Using endoscopy in surgery signifies not only the diagnosis of origin of acute or chronic diseases described by the patient, but also the classification for appropriate therapeutic method. This allows the surgeon to plan the type and scope of operational procedure before the operation, and to determine the risk of complications. In case of any complications he is able to determine them and implement emergency surgical treatment, and this quite often saves patient’s life. Endoscopy in surgery is also an intraoperational advantage allowing locating pathological lesions, which are hard to identify by means of other methods, and enabling detection of disease focuses diagnostically unavailable within the preoperational period.

Acute abdominal cavity conditions, including diseases of alimentary tract, are present in surgical departments on everyday basis. Acute alimentary tract condition is a name covering various medical conditions requiring quick diagnostics and decision on qualifying for emergency operating treatment, or possibly intensive surgical supervision. Until recently using endoscopy for diagnostics was contraindicated in the above-mentioned cases. It obtained specific meaning with the moment of
introducing new endoscopic method, laparoscopy, which supplemented intra-ductal diagnostics with the possibility to look into body cavities. Dynamic development of this technique proved to be extremely useful in patients with uncertain origin of acute abdominal symptoms and the only manner of determining the origin is to open the peritoneal cavity. In these cases the use of laparoscopic technique minimizes the operational injury, settles the cause of ailments, and what is the most important aspect, it allows avoiding unnecessary laparotomy.

Progress that took place in intra-ductal endoscopy is most clearly visible in case of haemorrhage from alimentary tract. Until 1980 almost 80% of haemorrhages were treated by means of emergency operational treatment. With occurrence of endoscopy between 1980 and 1990 they were treated with emergency endoscopy and early prophylactic operation, whereas since 1990 they were treated by means of emergency endoscopy with the use of various method of controlling the haemorrhage. This procedure had a considerable influence on the number of surgical procedures performed in an emergency mode, as their frequency dropped to 3%. Nevertheless in case of bleeding from alimentary tract it is always necessary to consider the performance of emergency surgical procedure. That is why majority of these patients was treated in surgical departments, especially when bleeding is of haemorrhagic character.

Significant losses in circulating blood volume quickly lead to haemodynamic instability, decrease in tissue perfusion, tissue hypoxia, multi-organ insufficiency and death. The course of this process is characterized by noteworthy dynamics in group of elderly patients, in case of whom organic and functional changes are on one hand a result of physiological ageing process, and on the other hand they are caused by co-existing diseases important for the life of these organs. Within this group of patients fast determination concerning the origin and intensiveness of the haemorrhage, controlling it, supplementing the lost circulating blood volume and qualifying for possible emergency operating treatment decides on further fate of the patient.

Haemorrhage from the alimentary tract usually origins from its upper segment, as the lower segment constitutes about 20% and is located within the scope of the large intestine. It is characterized with smaller dynamics and less frequently leads to serious haemodynamics disorders and is caused by diverticula, vascular changes or polyps. The situation with haemorrhages from the upper segment of the alimentary tract is quite different, as they are often of violent character and they may originate from ulcerations, neoplastic infiltration, and possibly acute injuries complicating the course of other diseases, such as multi-organ injuries, burns or sepsis. Additionally enhanced with disorders resulting from long use of anticoagulant medicines in patients treated on Intensive Care Units.

In such cases endoscopy is a commonly acknowledged diagnostic method, as it can be executed in almost 95% of patients, and it’s crucial benefit lies in the fact that it can be performed by the patient’s bed. Apart from determining the source of haemorrhage it enables to state its intensiveness and by the same gives the possibility of final or temporary control.

The basic principle in endoscopic diagnosing related with determination of the source of bleeding in the upper segment of the alimentary tract is to control the gullet, stomach and duodenum every time. It was proved that in 20-30% of cases there is more than one pathological lesion causing the haemorrhage. Time of performing the examination is of equal significance. At present times all authors are unanimous that the period between occurrence of bleeding and performing the examination should be as short as possible. Diagnostic efficiency of endoscopy during the first 24 h equals 90-97%, and after 72 hours – only 50%. Delaying gastroscopy endangers the patient with intensification of haemorrhagic results and by the same it does not allow to anticipate recurrence of the haemorrhage. Recurrence of bleeding, especially in persons with other ailments, quickly leads to haemodynamics disorders and repeated shock in patient, whose functions of vital organs were not fully stable. This condition is related with the highest death rate. A scale elaborated in 1974 by Forrest allows determining, with high probability, the risk of haemorrhage recurrence. It was reported that the highest risk occurs in case of arterial bleeding – Ia degree that, according to various authors, ranges between 85% and 200%, while in III degree it amounts solely to
The chance to arrest bleeding is an incredible advantage of endoscopy. It may use a number of thermal and non-thermal methods. In a significant number of patients this manner of proceedings allows to avoid emergency operation, and in some patients it is the chance to delay the above and provides time to prepare for operational treatment. This is particularly important in elderly people.

Almost until the end of the 20th century small intestine was not available for endoscopic diagnostics, also in case of bleeding. Due to technical progress a special “endoscopic capsule” was elaborated, which being transferred within the alimentary tract transmits the image of the mucous membrane. This method is only of diagnostic value, as it is impossible to arrest bleeding or remove the diagnosed lesion. What is more, it is contraindicated in case of assumption concerning narrowing within the lumen of the alimentary tract. Introduction of balloon enteroscopy, including double balloon enteroscopy was an improvement allowing controlling haemorrhage in case of such.

Acute pancreatitis is yet another acute condition, where endoscopic methods lately play an important role. This disease is specific for its rapidly changing clinical image, both local and general one, often leading to multi-organ insufficiency, which is a life threatening condition and it may therefore require emergency surgical intervention within a period of time that is hard to be defined. It is assumed that disease instability is caused by diphase property of its course. First phase results from the damage of follicular cells, excessive activation of white blood cell system and endothelial tissue cells. Together with releasing inflammation mediators the fluid escapes to the so-called “third space”, causing symptoms of hypovolemia, which if untreated leads to early development of multi-organ asthenopia. The second phase is characterized with domination of infection and toxemia with all their consequences.

Majority of authors emphasize that as far as AP treatment results are concerned, it is essential to determine ethiology of the disease and its advancement. Throughout the years acute pancreatitis therapeutic conceptions underwent frequent and radical changes – from conservative to aggressive surgical treatment. The last one lied in removing the whole organ was burdened with enormous amount of complications and death rate reaching almost 100%. Due to the above this aggressive procedure has been verified and quickly dropped. The progress which took place in diagnostics and treatment of acute pancreatitis, mainly the biliary one, during the recent years was based on introduction of endoscopic and laparoscopic techniques. This therapy bases on early execution of endoscopic papillotomy, which not only removes concrements from bile ducts, but also improves the outflow of the infected bile, and by the same it removes the source of pathogenic pathogens, and the simultaneous bile sampling for bacteriological examination is useful in further therapeutic process.

Removing the infected and changed gall-bladder within 24 hours after laparoscopic papillotomy is the following step in treating acute pancreatitis. This way the gallstone reservoir and the second source of infection is being removed and the patient does not suffer from ailments anymore. Simultaneously, laparoscopy allows evaluating the advancement of inflammatory process, peritoneal cavity lavage and implement lavaging drain under supervision. Proceedings in case of acute pancreatitis requiring experience of the surgeon include removal of necrosis, especially the infected one, and cystic changes, quite often large and compromising passage of the ingesta. Surgical experience and perfection of endoscopic technique allows removing necrosis through gastric wall and in case of cysts also allows introducing decompressing fistula by the same route.

Oclusion in the alimentary tract constitutes one of the main reasons for hospitalising patients administered in surgical emergency rooms. It would seem that endoscopy should be contraindicated in such cases. However, it turned out that it is advantageous not only as far as diagnosing the reason for this condition is concerned, but it may also become a method of radical or palliative therapy, and in a certain number of persons it only precedes the surgical treatment.

In majority of patients the reason of oclusion is located within the lower segment of the alimentary tract. The occluding elements are polyps and neoplastic infiltrations. Endoscopic removal of polyps and excluding their neoplastic character is a final means of treatment, although it does not release from performing complete control colonoscopy within a short
period of time, as there have been reports stating the existence of multiple polyps and the sequence adenoma – cancer.

First of all, the narrowing neoplastic infiltration in large intestine, giving symptoms of occlusion because of which the patient reported to surgical emergency room requires determining the location and character of the lesion. Endoscopy is quite helpful at this stage, as it allows for temporary decompression of the occlusion by introducing self-expanding prosthesis into the narrowed intestinal segment until the patient is prepared for the proper surgical treatment. When such conditions do not exist and it is necessary to implement emergency operational treatment, it should be essential to simultaneously perform intraoperative colonoscopy of the whole intestine, and as far as decompressing procedures are concerned colonoscopy should be executed shortly after the operation. It is commonly known that in about 10% of the cases one diagnosed neoplastic lesion may be associated by other ones, as well as polyp lesions considered to be a pre-cancer stage. Hence large intestine surgery covers not only operational treatment, but also endoscopy, which in the form of laparoscopy has lately become more and more widely used in treating this part of the alimentary tract.

Everyday life, which needs to be faced in surgical departments, also includes diagnosis and treatment of postoperative complications. Surgeon is the most competent person within this aspect. Within this aspect modern endoscopy also brought rational benefits, especially in group of burdened patients, in case of whom following surgical intervention would pose a considerable risk. The most commonly met complications include disjunction of the anastomosis, narrowing or bleeding. Implementing a drain by this route, using various types of glue or introducing prostheses turned out to be a successful therapeutic method in a substantial percentage of cases.

Therefore, nowadays endoscopy is integrally related with surgery and it is hard to imagine activity of any operation department without available endoscopic devices. In described cases it is impossible to imagine someone else than a surgeon could have performed that endoscopy. His competence within this scope should be highly evaluated. Results related with long-lasting use of endoscopy in treating abdominal cavity diseases, presented by the Team of 2nd Department of General Surgery Jagiellonian University Medical College only prove the above statement.

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