

# Endoscopic retrograde pancreatography in the diagnosis of chronic pancreatitis

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*The importance of endoscopic cholangiopancreatography (ERCP) in the diagnosis of chronic pancreatitis is the basic topic of the paper. The method is considerably more sensitive than any other radiological, especially noninvasive method used in diagnostics. Especially thanks to this combined endoscopic radiological method, chronic pancreatitis is at present classified in three groups. Thus, it is possible to make exact plans for the further treatment, which may be either medical (endoscopic), or surgical. An analysis is here made of 370 patients with whom chronic pancreatitis was established by this method. Of this number 286 (77 %) were men, and 84 (23 %) women. Most of the patients were between 40 and 50 years of age, their number being 204 (55 %). Here they appear classified into three groups according to the mentioned classification method. The group of mild chronic pancreatitis includes 154 (42 %) patients, 123 (33 %) patients show moderate changes, and 93 (25 %) patients have marked changes. It is important to point out that 211 (74 %) of 286 patients in their case history mentioned the consumption of alcohol and nicotine for more than five years.*

*Key words: pancreatitis-diagnosis, cholangiopancreatography, endoscopic retrograde; chronic disease*

## Introduction

Endoscopic retrograde Cholangiopancreatography (ERCP), a combined radiological method, was introduced into clinical practice 25 years ago and became a routine procedure in the diagnostics of biliopancreatic system complaints.<sup>1-4</sup> It has since taken a special place in the diagnostics of chronic pancreatitis, where it is much more sensitive than any other noninvasive radiological method such as ultrasound and computerized tomography.<sup>5-8</sup>

Except in the appraisal of the severity of chronic pancreatitis on the basis of changes in its ductal system, it also serves to the planning of any further treatment, which may be either medical (endoscop-

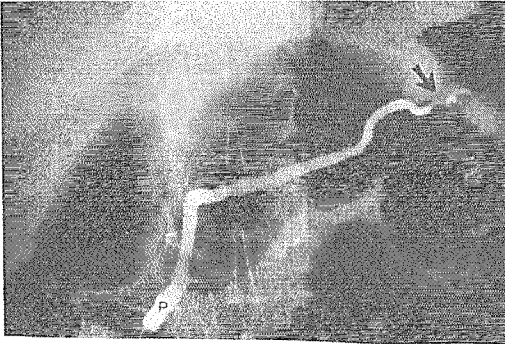
ical), or surgical.<sup>9-10</sup> The aim of the paper is to illustrate: the value of ERCP in the diagnostics of chronic pancreatitis and to make an analysis of the results obtained.

## Material and methods

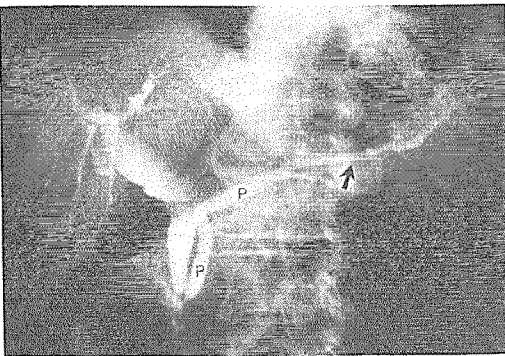
An analysis of 370 successful ERCPs in which chronic pancreatitis had been established was made. The indication was made on the basis of the patients' case history, clinical picture, lab reports, and the pancreas ultrasound examination of all patients was carried out as well. ERCP was made a technique as it was described and adopted by a great number of authors. In this case the special attention was given to the pre-ERCP control to detect pre-filling changes of parenchima, such as calcification before the central film examination.<sup>2-5, 7, 11</sup>

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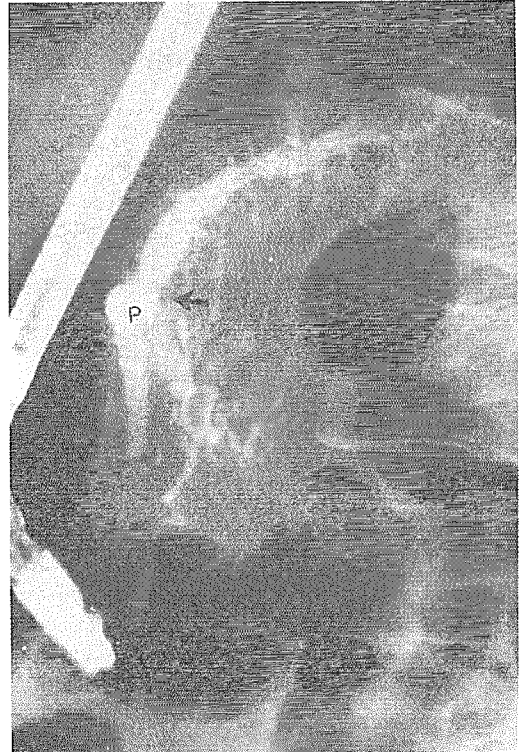
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**Figure 1.** Mild changes chronic pancreatitis. Normal ductus pancreaticus (P) and > 3 changes lateral duct (arrow).



**Figure 2.** Moderate changes chronic pancreatitis. Dilatation of ductus pancreaticus (P) and 3 changes lateral duct (arrow).



**Figure 3.** Marked changes chronic pancreatitis. The same as Figure 2 with extremely dilatation of ductus pancreaticus (P and arrow).

All ERCP findings have been classified by using the international system of 1984 (Table 1)<sup>12</sup> which is illustrated at Figures 1, 2, 3.

### Results

Of 370 successfully made ERCPs, where chronic pancreatitis had been found, 286 (77 %) were men, and 84 (23 %) women. The average age of all patients analysed was under 40, 93 (25 %); between 40 and 50 were 204 (55 %) patients, and 73 (20 %) patients were above 50. By using the above mentioned classification the group of mild changes comprised 154 (42 %) patients, the group of moderate changes 123 (33 %) patients, and the most severely affected group of marked changes 93 (25 %) patients. In this last group it is of interest to mention that it comprised 81 (87 %) men, and only 12 (13 %) women, all of them alcohol and nicotine consumers for five years of more. And of all the 286

men analysed, the case history of 211 (74 %) included a record of the consumption of these harmful agents.

### Discussion

Chronic pancreatitis in its mild form presents a difficult diagnostic problem.<sup>8,13-14</sup> In its severe form, with or without complications, the difficulty is increased by a very serious therapeutic problem. But it is exactly through the ERCP that today we have also numerous nonsurgical possibilities in the treatment of this disease at our disposal.<sup>14-18</sup> Another important fact to be pointed out is, thanks to this method, that the classification of chronic pancreatitis has been effected into three forms, which in turn is important for the treatment of this disease.<sup>11,12</sup>

To make the endoscopic treatment of this disease easier, there exist today also other classifications at our disposal, although they are rarely used.<sup>16</sup> This paper deals with the analysis of 370 ERCPs in

**Table 1.** Classification of chronic pancreatitis.<sup>12</sup>

| Terminology                 | Main pancreatic duct    | Number of damaged branches of pancreatic duct |
|-----------------------------|-------------------------|---|
| Normal finding              | unchanged               | none  |
| Border pathological finding | unchanged               | < 3   |
| Mild changes                | unchanged               | 3 or > 3                                      |
| Moderate changes            | pathologically changed  | > 3   |
| Marked changes              | pathologically changed* | > 3   |

\* With one, or more than one criteria: big cyst, obstruction, marked dilatation or marked changes of organ shape.

which chronic pancreatitis has been established. It is evident that in 77 % of the cases men are predominant, which is the result of the more frequent use of noxious agents such as alcohol and nicotine. It has been further noticed that the disease occurs at the most reproducible stage, and that is between 40 and 50 years of age. Similar data have been established also by other authors.<sup>19</sup>

The internationally accepted classification has been used also in this paper, in which 42 % cases of mild, 33 % cases of medium, and 25 % cases of severe chronic pancreatitis have been found. It is not possible to compare these data with the pertinent literature, as the severity of the disease is dependent upon the duration of the period of time during which the noxious agents have been consumed, the type of alcohol and nicotine, and a number of other external and internal factors.<sup>20-22</sup> It is sometimes difficult to make or solve the differential diagnosis of pancreas carcinoma regardless the series of methods used, noninvasive radiological or invasive endoscopic ones.<sup>23-25</sup> And to conclude with, it is exactly thanks to the ERCP combined endoscopic radiological method that chronic inflammatory pancreas diseases can be established at an early stage, to differentiate this method from other radiological non-invasive examinations. In severe cases of the disease, besides for making a strictly correct diagnosis, the method offers also at present wide therapeutic possibilities.

## References

1. Mc Cunne WS, Shorb PE, Moscovitz H. Endoscopic cannulation of ampulla of Vater. A preliminary report. *Ann Surg* 1968; **167**: 752-6.
2. Soehendra N. Technik, Schwierigkeiten und Ergebnisse der endoskopischretrograden Cholangio-Pankreatographie (ERCP). *Chirurg* 1977; **48**: 98-104.
3. Rubinić M, Švalba B. Endoskopska retrogradna holangiopankreatografija (ERHP). *Radiol Jugosl* 1984; **18**: 95-8.
4. Shimizu S, Tada M, Kawai K. Diagnostic ERCP. *Endoscopy* 1994; **26**: 88-92.
5. Malaferheimer P, Buhler M. Corelation of imaging and function in chronic Pancreatitis. *Radiol Clin North Am* 1989; **27**: 51-7.
6. Hessel SJ, Sigelman SS, Neil BJ, Sander R. A prospective evaluation of computed tomography and ultrasound of the pancreas. *Radiology* 1986; **143**: 129-33.
7. Rosch T, Classen M. Role of ERCP in Chronic Pancreatitis. In: Beger HD, ed. *Chronic Pancreatitis*. Springer Verlag, 1990; 319-29.
8. Rosch W. *Vertung bildgebender Verfahren bei der chronischen Pankreatitis*. Perimed Fachbuch mbh Erlangen, 1989.
9. Mulferheimer P, Buchler M. Indications for Endoscopic or Surgical Therapy in Chronic Pancreatitis. *Endoscopy* 1991; **23**: 185-90.
10. Genen JE, Rolny P. Endoscopic therapy of acute and chronic pancreatitis. *Gastrointest Endosc* 1991; **37**: 377-82.
11. Nagata A, Honna T, Tomai K. A study of chronic pancreatitis by serial endoscopic pancreatography. *Gastroenterology* 1981; **81**: 884-91.
12. Axon ATR, Classen M, Cotton PB, Cremer M, Freeny PC, Lees WE. Pancreatography in chronic pancreatitis international definitions. *Gut* 1984; **25**: 1007-12.
13. Niedrean C, Grendell JH. Diagnosis of chronic pancreatitis. *Gastroenterology* 1985; **88**: 1073-81.
14. Grabner W, Koch H. ERP bei chronischer Pankreatitis. In: Grabner W, Mann HPK, eds. *Klinik der chronischen Pankreatitis*. Perimed Fachbuch mbh Erlangen, 1989.
15. Oelckers M, Wurbs D. Einsatz der ERCP bei Pankreaserkrankungen. *Z Gastroenterol* 1992; **30**: 379-84.
16. Cremer M, Deviere M, Delhay M, Boize N. Stenting in Severe Chronic Pancreatitis: Results of Medium-Term Follow-up in Seventy-Six Patients. *Endoscopy* 1991; **23**: 171-6.
17. Binmoeller KF, Jue P, Seifert H, Izbicki J, Soehendra N. Endoscopic Pancreatic Stent Drainage in Chronic Pancreatitis and a Dominant Structure: Long-Term Results. *Endoscopy* 1995; **27**: 638-44.
18. Sahel J. Endoscopic Retrograde Pancreatography Findings and Their Grading in Chronic Pancreatitis. In: Malfertheimer P, Ditschuneit H, eds. *Diagnostic procedures in pancreatic disease*. Springer Verlag, 1988; 96-107.
19. Lowenfels AB, Maisonneuve P, Cavallini G. Prognosis of Chronic Pancreatitis: An International Multicenter Study. *Am J Gastroenterol* 1994; **89**: 1467-71.

20. Sarles H. Chronic pancreatitis etiology and pathophysiology. In: Gole LW, ed. *The exocrine pancreas biology pathobiology and diseases*. Raven Press-New York, 1986: 527-46.
21. Miyake H, Hared H, Kinischicka K. Clinical course and prognosis of chronic pancreatitis. *Pancreas* 1987; **2**: 378-85.
22. Folsch UR. Chronische Pankreatitis. *Therapiawoche* 1990; **40**: 634-8.
23. Lowentfels AB, Maisonneuve P, Cavallini G. Pancreatitis and the pancreatic cancer. *N Eng J Med* 1993; **328**: 1443-7.
24. Bedford RA, Howerton DH, Geenen JE. The Current Role of ERCP in the Management of Bening Pancreatic Disease. *Endoscopy* 1994; **26**: 113-9.
25. Lankisch PG, Staritz M, Freise J. Sicherheit bei der Diagnostik der chronischen Pankreatitis. *Z Gastroenterol* 1990; **28**: 253-8.