

## EDITORIAL

M. Stolte

## Diagnosis of gastric carcinoma: Japanese fairy tales or Western deficiency?

So now we know why so many early gastric carcinomas are diagnosed in Japan: Japanese pathologists “overdiagnose” dysplasia of the gastric mucosa as carcinoma. This was the tenor of many of the commentaries on a study, published in *The Lancet*, on the differences in diagnostic criteria for gastric carcinoma between Japanese and Western pathologists [1]. One of the gastroenterologists even entitled his commentary, “Japanese Fairy Tales” [2].

Like those Japanese surgeons who validated their statistics on gastric carcinoma [3], these commentators overlooked the fact that some Western pathologists had made the same diagnoses as the Japanese pathologists. One of the four Western pathologists in the study in *The Lancet* had made exactly the same diagnosis on forceps biopsy material as all four Japanese pathologists. There was another point that the “anti-Japanese” commentators had overlooked: the diagnoses made on biopsy material had been subjected to “quality control” in later endoscopic mucosal resection specimens. This comparison revealed a significant difference. Whereas the four Japanese pathologists and the one Western pathologist had made the same diagnosis on both specimens, there was a statistically significant discrepancy in the diagnoses made by the Western pathologists. In cases where in biopsy specimens the Western pathologists had seen predominant dysplasia, they made the diagnosis of carcinoma in the larger endoscopic mucosal resection specimen. A rejoinder to the commentary therefore posed the reasonable counterquestion “Western Deficiency?” [4].

In a less provocative mode, one should really ask whether it is possible that Japanese gastrointestinal pathologists are able to differentiate more reliably between dysplasia and well-differentiated gastric adenocarcinoma simply because they have much more experience and much more training than most Western pathologists. This is related to the much higher yield of early gastric carci-

nomas in Japanese gastroenterological endoscopy practice. It was not the supposed overdiagnosis by Japanese pathologists that led to this development; rather, mass screening programmes for early gastric carcinoma have led to many consultations and clinicopathological conferences between gastroenterologists and pathologists, resulting in a reciprocal learning effect. The enormous improvement in the optical quality of endoscopes in past decades has also played a role. Only against this background is it understandable that the proportion of early carcinomas among all diagnosed gastric carcinomas is currently between 60% and 70%. Only against this background is it possible to understand that in the course of the past 20 years the diameter of early gastric carcinomas diagnosed has decreased continuously, the proportion of mucosal carcinomas among early carcinomas has risen to 60%, and approx. 60% of early gastric carcinomas are resected endoscopically in Japan.

In this period Japanese pathologists have learned to question the established criteria for invasion. Proceeding from investigations of well-differentiated tubular adenocarcinomas with definite submucosal invasion of the tubular carcinoma formations, our Japanese colleagues recognized faster than we in the West that not only “invasion” of individual tumour cells into the lamina propria, but trabecular clusters of tumour cells, or isolated tumour cell clusters also demonstrate invasive growth. Neoplastic carcinoma tubules should be considered invasive – as in well-differentiated adenocarcinoma of the prostate or in lymph node micrometastases of other adenocarcinomas. This hypothesis was impressively confirmed by three-dimensional reconstructions of serial sections [5]. Many Western pathologists still take for “atypical branching” or “budding” what are very probably invasively growing carcinoma tubules.

Many present-day Japanese gastroenterological pathologists do not appear to think about the problem of invasion of the lamina propria of the mucosa. If they see that the basic structure of the neoplastic tubules is disturbed and irregular and if they find all the cytological criteria of malignancy, they diagnose a well-differentiat-

M. Stolte  
Institut für Pathologie, Klinikum Bayreuth, D-95445 Bayreuth,  
Germany  
Tel.: +49-921-4005600, Fax: +49-921-4005609

ed adenocarcinoma. They do this on the basis of their experience with thousands upon thousands of cases of well-differentiated adenocarcinomas, in which the findings in the biopsy specimen have been compared with the endoscopic images and the macroscopic findings with the histological findings in the resection specimen.

That a lack of experience with these diagnostic procedures is very probably the main reason for the uncertainty of many Western pathologists when it comes to differentiating between dysplasia and well-differentiated adenocarcinoma can be inferred from the following: A comparison of diagnostic criteria between Western and Japanese pathologists in Munich in the spring of 1998 showed that another very experienced English pathologist made exactly the same diagnoses as the Japanese, whereas a younger Western pathologist with relatively little experience in routine diagnostic work classified the well-differentiated adenocarcinomas as "dysplasia".

One comes to the same conclusion when one analyses studies by Western pathologists on the course of cases of "dysplasia" of the gastric mucosa diagnosed by themselves. Most cases of high-grade dysplasia were already carcinoma at initial diagnosis [6–8]. The diagnosed cases of low-grade dysplasia were often – and frequently still are today in Western pathology departments – overdiagnosed regenerative changes, especially within intestinal metaplasia.

On the occasion of the World Congress of Gastroenterology in September 1998 an expanded group of 31 pathologists from all over the world came together. An evaluation of the diagnoses of 35 gastric samples showed that the group of Western pathologists who make the same diagnoses as their Japanese colleagues had been augmented by three European colleagues who were especially well versed in gastroenterological pathology. What is particularly interesting is that one of the Western pathologists from the first meeting in Tokyo, who had diagnosed a carcinoma in only 46% of the biopsy samples, had now almost joined the Japanese pathologists and evaluated 63% of the same slides as carcinoma.

From this evidence we can infer that we are well on the way toward overcoming the differences between Japanese and Western pathologists in the diagnostic criteria for gastric carcinomas. I think we have already learned a lot from our Japanese colleagues and will continue to learn from them. Our Japanese colleagues should make a

worldwide tradition of slide seminars like those in Tokyo, Munich and Vienna, to accelerate the learning process in the West.

In Japan people should consider whether "*Stomach and Intestine*," which is probably the best journal for learning about early neoplasms of the gastrointestinal tract, should not be published in English as well as Japanese. Additionally, we Western pathologists should avail ourselves more of the great hospitality of our Japanese colleagues than we have done so far, to gain training in their departments with their large collections of early gastric carcinomas.

A story from the year 1970 is still informative. When I returned from the World Congress of Gastroenterology in Copenhagen and enthusiastically told my teacher, Kurt Elster, about the statistics on early gastric carcinoma in Japan, which were already impressive, his answer was, "that is a Japanese phenomenon that does not exist outside of Japan." In 1971 Elster was invited to speak in Japan and extended his stay, so as to be able to study histological specimens of early carcinoma in Mochizuki's department. His comment on his return from this intensive course: "Oh God, how much I overlooked in the past!"

## References

1. Schlemper RJ, Itabashi M, Kato Y, Lewin KJ, Riddel RH, Shimoda T, Sipponen P, Stolte M, Watanabe H, Takahashi H, Fujita R (1997) Differences in diagnostic criteria for gastric carcinoma between Japanese and Western pathologists. *Lancet* 349:1225–1229
2. Anonymous (1997) Magenkarzinom-Früherkennung: Japanische Märchen? *Münch Med Wochenschr* 139:21
3. Sakamoto J, Yasue M (1997) Do Japanese statistics on gastric carcinoma need to be revised? *Lancet* 349:1711–1712
4. Stolte M (1997) "Japanische Märchen" oder "Westliche Insuffizienz"? *Münch Med Wochenschr* 139:14–16
5. Takahashi T, Iwama N (1985) Three-dimensional microstructure of gastrointestinal tumors. Gland pattern and its diagnostic significance. *Pathol Annu* I:419–440
6. Saraga E-P, Gardiol D, Costa J (1987) Gastric dysplasia: a histological follow-up study. *Am J Surg Pathol* 11:788–796
7. Fertitta AM, Comin U, Terruzzi V, et al. (1993) Clinical significance of gastric dysplasia: a multicenter follow-up study. *Endoscopy* 25:265–268
8. Rugge M, Farinati F, Baffa R, et al. (1994) Gastric epithelial dysplasia in the natural history of gastric cancer: a multicenter prospective follow-up study. *Gastroenterology* 107:1288–1296