EDITORIAL

Medical economics in therapeutic endoscopy: a critical appraisal

The year 1980 is a landmark in the history of therapeutic endoscopy when the first biliary stent was placed across an obstructed biliary tree. During the subsequent 17 years the procedure of biliary stenting has become well established as an effective measure in the management of biliary obstruction. Surgeons have also welcomed this endoscopic technique as it provides them the much required breather in pressing and urgent biliary obstructive conditions.

The indication par excellence for biliary stenting is malignant obstruction in a patient with inoperable cancer. Endoscopic stenting has been shown to be very effective and superior to surgical or percutaneous drainage, carrying a much lower morbidity and mortality. In several large series the successful drainage rates have been shown to be around 90%-95% for lower end blocks and 80%-85% for hilar blocks. The complication rates have varied from 4%-40%, with cholangitis being the chief complication especially in hilar blocks. The 30-day mortality has been shown to be 4%-29%.

In this issue of the Journal, Santhi Swaroop et al have published their experience of biliary stenting in 402 patients with malignant obstruction (including both hilar and lower-end blocks) over a period of 5 years. The success rate was 72% with an acceptable complication rate of 15%. These are certainly impressive data. The most important aspect of this report, however, is that a substantial reduction in the cost of the procedure could be achieved by using home-made stents and reusing endoscopic accessories after sterilization. With these improvisations, the cost per procedure came down from Rs 14,350 to Rs 6565. (A non-paying patient had to pay only Rs 845 as this was a government-aided hospital; the subsidy of Rs 5720 is, of course, borne by the national exchequer and hence the tax-paying lot of the country.)

The technique and the accessories used by this group are fairly standard ones. They used two types of guide wires — a 380-cm-long hydrophilic guide wire (Terumo Inc, Japan) and a 450-cm-long regular Teflon® guide wire. We use a shorter hydrophilic guide wire (250 cm long), the cost of which is only Rs 750. This wire is used to negotiate strictures and can be easily used 8-10 times, bringing the cost per procedure to Rs 70-80. The second wire we use is a Zebra guide wire (Microvasive, Boston Scientific Corp, USA; cost Rs 5500) as an exchange wire. This guide wire has many advantages; it does not bend, it obviates the need for fluoroscopy during exchange, and a stent can be directly advanced over it. Furthermore, it can be used 15-20 times, thereby bringing down the cost per procedure to Rs 300. Thus, using a combination of these two types of wires may be much more cost-effective than the practice adopted by Santhi Swaroop et al., in addition to having the advantages of the Zebra wire mentioned above. Our success rate with biliary stenting is around 85% (unpublished data).

The Tata Memorial group used another innovative technique, i.e., stripping the hydrophilic coat of the Terumo glide wire along its full length, except the distal 20 cm. This may not be necessary with the availability now of a similar guide wire with a hydrophilic distal end and the regular Teflon® making the rest of the wire (Tracer, Wilson-Cook, USA).

One other point regarding the procedure: the authors did not use a new accessory in case they failed to cannulate the papilla or negotiate the stricture. Had they used a new accessory in such a situation, the success rate might have improved without compromising the basic idea of reusing the accessories since each accessory must have been used in some patient for the first time anyhow.

The idea of reusing endoscopic accessories in order to cut down the cost is actually relevant not only for developing countries such as ours but also for developed and rich countries like the USA. In fact, in most centers in Europe and other parts of the world such as Hong Kong, endoscopic accessories are being reused after sterilization. Even in the US, endoscopic accessories were being reused till the Occupational Safety and Health Administration published guidelines and regulations for their single use. This led O’Connor to question in an editorial whether these recommendations were because of manufacturers’ “opportunism”. The editorial accompanied an elegant study by Kim-Deobald et al in which they had shown that the policy of single use of endoscopic accessories escalated the cost per procedure by USS 190, and this alone made up 42% of the total reimbursement amount of USS 453 from health insurance.

A report by the American Society of Gastrointestinal Endoscopy (ASGE) Technology Assessment Committee showed that the risk of transmitting an infection from a disinfected endoscope was only one in 1.8 million procedures. Thus, the risk of infection by reusing sterilized accessories will be abysmally low. These studies underscore the need for a reconsideration of the policy of single use of endoscopic accessories especially when they are to be used in conjunction with a disinfected and not sterilized endoscope.

Having said that, there is a word of caution. The endoscope and its accessories must have a “proper wash”
(read disinfection/sterilization)\textsuperscript{12} and not merely an eye wash. This may happen not too infrequently in busy endoscopy centers where there is a heavy load of procedures but only a single endoscope in operation. The article by Santhi Swaroop et al\textsuperscript{7} reminds us of our responsibility to properly sterilize endoscopic accessories (e.g., by ethylene dioxide) lest, in our effort to cut down costs, the patient ends up paying a heavy price. Endoscopy training programs must include training of all personnel regarding proper disinfection of endoscopes and accessories. They should also provide trainees instructions and guidelines for making stents and other accessories themselves in their own endoscopy suites.

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References

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The Editorial Board of the Indian Journal of Gastroenterology announces the institution of an annual award for the best original scientific contribution published in the Journal during the year.

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