

## EDITORIAL

### LAPAROSCOPIC APPENDICECTOMY

For a surgeon to write an editorial on a procedure which he has not performed entails the risk that he will be accused of crying sour grapes. Fortunately there is an abundance of literature available on the subject, including a number of meta-analytical studies. Although the studies are often confusing and contradictory, the general trend of opinion is sobering: the excitement about key-hole surgery is waning.

These are comments from the South African Journal of Surgery (1) "Twelve years after the birth of laparoscopic surgery in South Africa we are seeing less enthusiasm and still more questions than answers". It is useful to begin this appraisal by recalling the historical fact that the proponents of minimal access surgery, when the method was introduced, had three main arguments in favour of the new technology: they could, rightly, claim that laparoscopic surgery was associated with less morbidity, particularly less pain, than laparotomy; that, in consequence, hospital stay was shortened and people were able to return to normal activities earlier; and that, although there were more scars in number but that they were small and considered less unseemly.

The ensuing competition between the minimal access practitioners and the traditional laparotomists had the amazing and unexpected side effect that the laparotomists and their anaesthetists were obliged to concentrate their minds on the reduction of morbidity and on better pain management.

The results of this effort was beneficial to all patients. Doctors and nurses discovered that better pain management, consisting of infiltration of the wound with local anaesthetics before closure, minimising the use of morphia and pethidine and greater reliance on NSAIDs, including their preventive use, and the combination of these measures, in itself diminished morbidity by reducing nausea, allowing early feeding and mobility and also diminishing the incidence of paralytic ileus, atelectasis and thromboembolism.

Experience gained in the last decade clearly shows that the morbidity of traditional appendicectomy (to focus on this alone) was attendant to poor pain management and its complications and not to the laparotomy per se.

Today most patients who had an appendicectomy per laparotomy for a non-perforated appendicitis will be able to go home within 24 hours after the operation just like the laparoscopic group, and it is very likely that soon appendicectomy, whether open or "key hole", will be available on day surgery basis.

As far as return to normal activities is concerned, probably there is no appreciable difference either, whereby the confounding circumstance is that the decision when to return to work is influenced by many factors, physical fitness and freedom from pain being not the most important ones. Today the most obvious difference between the two

modalities of the procedure is the presence or the absence of a laparotomy scar. Indeed, from the patient's point of view this is the decisive factor and in terms of the popularity of keyhole surgery this is the sole selling point. The question is whether this cosmetic consideration comes at a cost, in other words: is there evidence that laparoscopic appendicectomy carries a higher complication rate than open appendicectomy?

According to the Cochrane database systematic review (2), this is not the case and hence the reviewers tilt towards recommending the laparoscopic approach provided that it is practised by experts, but state clearly that "... the clinical effects of laparoscopic appendicectomy are, however, small and of limited clinical relevance".

Most recent reviews emphasise that the clinical advantages of the laparoscopic approach are minimal or non-existent but go on to say that the key hole procedure takes longer and costs more. This opinion is shared by Germans (3): "there were no differences in post operative analgesia, resumption of oral intake, or morbidity, but laparoscopic appendicectomy is associated with longer operating times and increased cost"; Americans (4) say that: "differences in outcome between open and laparoscopic appendicectomy are minor"... "Savings from the slightly shorter hospital stay after laparoscopic appendectomy are offset by higher surgical cost of the laparoscopic equipment"; South Americans (5) assert that: "laparoscopic appendicectomy does not offer significant benefits over open appendicectomy in patients with acute appendicitis with the exception of the aesthetic aspect in women and has disadvantages: longer operating time and more expense"; (6) add that "laparoscopic appendectomy is comparable to open appendectomy with regard to complications, length of post operative hospital stay, but is more costly. Laparoscopic appendectomy does not offer any significant benefit over the open approach".

With regard to cost, the Mayo Clinic offers a dissenting view (7). Whilst it is stated that the advantages of the laparoscopic approach are "clinically questionable" the claim is made that the direct and indirect costs of the laparoscopic procedure are less expensive. There is one undoubted advantage of the laparoscopic procedure: if the diagnosis is problematic, laparoscopy allows inspection of the peritoneal cavity. This is of advantage, particularly in young women, in whom pelvic pathology related to reproductive organs - be it Mittelscherz, ectopics, PID etc is often confused with appendicitis.

A study from Russia (8), is emphatic that laparoscopy allows the diagnosis of appendicitis in 92.5% of instances and another from Italy (9), recommends its liberal use in women of reproductive age. Another pertinent observation must be mentioned: the availability of laparoscopy may have lowered the threshold to operate: "... this is reflected in higher negative exploration rates" (10). Interestingly

this seems to have been precisely the case in the practice of Patel *et al.* reported in this issue of the journal (11). The authors present their experience with laparoscopic appendicectomy at the Aga Khan Hospital. According to them, of the 106 appendices thus removed 94 were pathological. "Of the pathological cases, 45 were acutely inflamed and 47 were chronically inflamed". Chronic appendicitis is a highly dubious pathological entity and it remains questionable that those 47 patients required appendicectomy.

It is also interesting that of the 34 references quoted in this paper, seven are from the early nineties, 15 from the late nineties and only three are more recent. This seems to be symptomatic for papers still propounding the supposed advantages of the laparoscopic approach in general and laparoscopic appendicectomy in particular. Another paper published in this journal earlier this year (12), standing on much firmer ground given the undoubted advantages of the laparoscopic approach to the adnexa, lists seven recent references out of 31, whilst it is also exhorting the myth that keyhole surgery promises a much shorter hospital stay than laparotomy.

In contrast to these assertions, perusal of the records of a major Kenyan insurer shows that the last 37 consecutive cases of laparoscopic surgery (appendicectomy, cholecystectomy, operations on the adnexa and hysterectomy) spent an average of 4.0 days in hospital. This is not an impressive performance.

In summary, it appears that the laparoscopic approach is justified in women of reproductive age where the diagnosis is in doubt. In these instances laparoscopy has great advantages and should the diagnosis of appendicitis be confirmed is good practice to proceed and remove the appendix by laparoscopic means - unless a conversion to laparotomy is necessary for technical reasons. Whether under these circumstances appendices should be removed even when not acutely inflamed is another question.

In all other cases, particularly if the diagnosis is not in doubt, the advantage of the laparoscopic procedure is merely cosmetic. Whilst, if carried out expertly, assertions of the conservatives notwithstanding, it does not carry a higher complication rate than the open procedure; it does take more time and is more expensive. The said insurer paid for the quoted 37 cases of laparoscopic procedures an average of US\$ 1870, certainly more than if those procedures were performed via laparotomies.

Lastly, there is the question of who should be allowed to perform laparoscopic procedures. The South African Journal of Surgery, states clearly that in many countries one is only allowed to do laparoscopic surgery after successful completion of a training fellowship. The need for such should be quite obvious; after all it is easier to learn how to build a model ship on the top of the table than inside a bottle.

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