

## A randomised controlled trial comparing laparoscopy with laparotomy in the management of women with ruptured ectopic pregnancy

**To the Editor:** We read with interest the article that appeared in the March 2017 issue of SAMJ<sup>[1]</sup> and would like to commend the authors on the publication of this important topic, demonstrating the advantages of laparoscopic surgery for the management of women with ruptured ectopic pregnancy (REP).

Even though the authors randomised the patients, in our opinion they failed to categorise the group of patients they refer to by not quantifying the haemoperitoneum. The description of such patients can be difficult, as there is no agreed standardisation. Do they refer to REP as including women in whom haemoperitoneum was demonstrated on an ultrasound scan and, if that was the case, what was the amount of blood in the peritoneal cavity? Does REP include the 30% of women who present with unquantified haemoperitoneum,<sup>[2]</sup> or the 6% of patients with significant haemoperitoneum ( $\geq 800$  mL), as defined by Odejinmi *et al.*<sup>[3]</sup>

Although the authors demonstrate the advantages of the operative laparoscopy approach to the management of ectopic pregnancy, particularly in the low-cost setting, in eliminating patients with an Hb  $< 8$  g/dL, a pulse rate  $< 100$  beats/minute, and a systolic blood pressure  $< 90$  mmHg, they may have been managing patients with minimal haemoperitoneum, whose outcomes would have been no different from women with unruptured ectopic pregnancies. This can also be inferred by the small difference in pre- and postoperative Hb levels in both groups of randomised patients.

Furthermore, Snyman *et al.*<sup>[1]</sup> have highlighted that laparoscopy took significantly longer than laparotomy. Surely, the pivotal fact in a REP should be the time taken to haemostasis – not the total operating time. Moreover, the increased time is most probably a function of the experience of the operating surgeon, as there is ample evidence from units with experienced laparoscopic surgeons that laparoscopy is equally quick – if not quicker – compared with laparotomy. We fear that these data, if presented without qualification, might send a message reverting modern accepted practices.

In our institution, we have been able to offer operative laparoscopy to nearly all women, irrespective of location of the ectopic pregnancy or haemodynamic status, but this has taken time, effort and education of all involved in the management of ectopic pregnancy.<sup>[4]</sup>

It is hoped that, using their randomised study as a baseline, the authors will be able to update the academic community on their progress and changing trends in the laparoscopic management of ectopic pregnancy in a low-cost setting in a few years' time.

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**Prof. L C Snyman *et al.* respond:** Thank you for the opportunity to respond to the letter by F Odejinmi and R Oliver. We would like to thank them for their interest in our work and the important issues raised.

The objective of our study was to include patients who, by definition, did not present with a diagnosis of unruptured ectopic pregnancy, as the trials referred to in the Cochrane Review were limited to patients with unruptured ectopic pregnancies.<sup>[1]</sup> We agree that the term 'ruptured ectopic pregnancy' does not accurately describe the cohort of women in our study, as many of these patients were bleeding into the peritoneal cavity without having demonstrable tubal rupture. The clinical diagnosis of a ruptured or bleeding ectopic pregnancy with any amount of haemoperitoneum was sufficient for inclusion in the study. Patients with unruptured ectopic pregnancies were excluded.

The haemodynamic exclusion criteria were arbitrarily chosen after discussion with the anaesthetic department, as we were reluctant to include patients who were haemodynamically unstable, mainly owing to safety and ethical considerations. In our setting, laparoscopic management of these patients was not the standard of care at the time the study was conducted. We agree that these parameters did select for cases with less severe amounts of bleeding. The postoperative Hb values referred to did not reflect the severity of the cases, but demonstrated the quality of intraoperative resuscitation – evident from the statistically significant difference in blood transfusion requirements between the two groups. The laparotomy group required more blood transfusions (mainly commenced intraoperatively), and the postoperative Hb levels suggest that these transfusions were appropriate. We are, therefore, of the opinion that the group of patients described in our article are different from patients with unruptured ectopic pregnancies without haemoperitoneum. There is also enough other evidence supporting the view that patients with severe haemoperitoneum and even hypovolaemic shock can be safely managed by laparoscopic surgery.<sup>[2,3]</sup> We have shown (Table 4),<sup>[4]</sup> with multinomial logistic regression, that the increased operating time is a function of the procedure – not only the function of the operator. We do agree that with more experience the operating time can be shorter, but we do not think that the total theatre time will be the same or shorter as for the open procedure, as is the case in most laparoscopic operations. The reason for commenting on operating and theatre time is that in the context of a limited-resource setting, such as ours, theatre time is a scarce commodity, with several disciplines requiring and competing for after hours' emergency theatre time. These theatre lists are managed and prioritised by the anaesthetic staff on call. In our experience, the time issue remains the main stumbling block in ensuring that all eligible women receive emergency laparoscopic surgery where indicated, as the dictum eloquently phrased by Dargent<sup>[5]</sup> that 'we can do it faster open' is still a reality in the minds of theatre nursing and anaesthetic staff.

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