Minilaparotomy and endoscopic techniques for tubal sterilization

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Major morbidity is a rare with minilaparotomy and laparoscopy, but culdoscopy is associated with serious complications. The choice between minilaparotomy and laparoscopy can be made based on the surgeon's preference, but culdoscopy is not recommended.

RHL Commentary by Peterson HB

1. EVIDENCE SUMMARY

The primary purpose of this review is to compare operative morbidity and mortality associated with three alternative surgical approaches (minilaparotomy, laparoscopy, and culdoscopy) for entering the abdominal cavity to perform tubal sterilization. As the authors note, the surgical approach to entering the abdominal cavity is but one major determinant of the safety of tubal sterilization – others include the technique of anaesthesia and the method of tubal occlusion. This review concludes that major morbidity seems to be a rare outcome when minilaparotomy and laparoscopy are used as the surgical approach and that there is no difference in risk of major morbidity between the two groups, although the included studies had little power to detect potentially important differences. Culdoscopy was associated with more major complications than minilaparotomy and more minor complications than laparoscopy. The choice between minilaparotomy and laparoscopy can be made on preferences, but culdoscopy is not recommended.

The authors appropriately searched the literature using the search strategy of the Cochrane Collaboration to identify all randomized controlled trials comparing minilaparotomy, laparoscopy, or culdoscopy for tubal sterilization. The inclusion criteria for the studies were appropriate. The studies in the review compared three methods of abdominal entry without regard to the technique of anaesthesia or the method of tubal occlusion, both of which are key determinants of safety of sterilization. The fact that those two determinants were not comparable is one of the major methodological limitations of the studies available to the authors for review. The second limitation is that the trials comparing minilaparotomy with laparoscopy, the single trial comparing minilaparotomy and culdoscopy, and the single trial evaluating minilaparotomy, laparoscopy, and culdoscopy, had far too few subjects to evaluate potentially meaningful differences in risks of mortality and major morbidity. The authors note these limitations in the review. Most of the data for the key comparison between minilaparotomy and laparoscopy are from a single trial conducted by WHO in seven developing country centres.

2. RELEVANCE TO UNDER-RESOURCED SETTINGS
2.1. Magnitude of the problem

Tubal sterilization is a popular contraceptive choice in many developing countries. As the authors note, at least 100 million women in developing countries may undergo sterilization in the next two decades. The choice of the surgical approach to tubal sterilization (minilaparotomy, laparoscopy, and culdoscopy) has major implications for family planning programmes in developing countries. This choice will not be made in isolation but rather will also be made in concert with decisions regarding choice of anaesthetic technique and method of tubal occlusion. Minilaparotomy is the surgical approach currently used most often in many developing countries.

2.2. Feasibility of the intervention

Minilaparotomy is more feasible than laparoscopy or culdoscopy in many under-resourced settings. As the authors note, culdoscopy is not recommended because it appears to be less safe than the alternatives. Laparoscopy equipment is expensive to purchase and requires special maintenance, which is also expensive and may be difficult in under-resourced settings. Surgeons need to be specially trained for both the laparoscopic and minilaparotomy approaches. An advantage of minilaparotomy is that the instruments used are standard surgical instruments and the surgical technique for minilaparotomy is similar to that for other laparotomy procedures. Laparoscopy has become extremely popular in many developed countries and in many such countries minilaparotomy is only used for interval sterilization when the woman is not considered a suitable candidate for the laparoscopic approach.

2.3. Applicability of the results of the Cochrane Review

The authors have carefully reviewed and appropriately summarized available studies. These studies, however, do not permit a thorough comparison of the risks of mortality and major morbidity between minilaparotomy and laparoscopy because of the limited power of the studies. They do, however, as noted by the authors, suggest that both minilaparotomy and laparoscopy are, in general, appropriate approaches with respect to safety. This review focused on safety and was not intended to address issues of effectiveness which are largely dependent on choice of method of tubal occlusion – which, in turn, is related to the choice of surgical approach (the methods of tubal occlusion used with the laparoscopic approach are infrequently used with minilaparotomy and vice versa).

2.4. Implementation of the intervention

The review does not deal with an intervention per se. Rather it compares two alternative techniques for abdominal entry for tubal sterilization. Both these techniques appear to be safe.

The general intervention being addressed is surgical sterilization. Both tubal sterilization and vasectomy should be safe and widely available for women and couples who choose to use a permanent method of contraception. Such choices should always be fully informed and voluntary. Training requirements are generally greater for laparoscopy than for minilaparotomy.

2.5. Research

A complete description of the comparable risks of mortality and major morbidity by surgical approach to tubal sterilization would require further study. However, available observational studies suggest that in both developing and developed countries, the risks of mortality from both approaches are low. Preventable causes of death and major morbidity have likewise been identified from observational studies and strategies are available for reducing the risk of injury to abdominal organs, infection, and haemorrhage. As noted, the risks of mortality and major morbidity are also determined by the anaesthetic technique used and method of tubal...
occlusion, which are the subjects of other reviews.


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