



# Morcellation Controversy; do we have an Answer?



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## Introduction

Minimal invasive surgeries are now well established in practice for many years and have gained widespread importance due to less postoperative morbidity and mortality. More innovative techniques have been developed over a period to enhance these procedures and optimize specimen retrieval. Morcellation, a technique used to facilitate removal of large specimen through fragmentation was introduced in 1973 and now has become an integral part in most of the gynecological surgeries. Two approaches i.e. manual and power morcellation have eased out the delivery of large specimen in laparoscopic surgery. Most of the hysterectomies and myomectomies are performed laparoscopically now a days with comparable outcome to other surgical approaches. There is no difference in terms of complications, risk of myoma recurrence or reproductive outcome apart from the conversion rate of 0.3% to 0.5% to open myomectomy [1-4]. No doubt, these new innovations have improved the capabilities of clinicians but are not without risks and legal litigations. There is a risk of tissue trauma, dispersion of morcellated tissue throughout abdominal cavity and a serious consequence of dissemination of occult malignancy in laparoscopic morcellation. Based on unforeseen cases, Food and Drug administration (FDA) released statement in 2014 against morcellation of uterine specimen because of oncological risk. Comprehensive review by FDA found the risk of morcellating an unsuspected uterine sarcoma to be 1 in 352 and uterine leiomyosarcoma 1 in 498. The women in peripostmenopausal group and those for en bloc specimen are not appropriate for power morcellation. After this, significant drop in the number of minimal invasive approaches was observed which led to the development of new techniques like contained morcellation and has pushed this topic to the forefront for the discussion. The recommendation against morcellation has been challenged by many service providers and has greatly influenced trends in gynaecological surgeries. The intent of the index article is to throw light on the current recommendations of laparoscopic myomectomy and morcellation.

## Potential Risks of Morcellation

Leiomyosarcoma is highly aggressive tumour of rare occurrence. The incidence of occult leiomyosarcoma in benign gynaecological surgeries is reported to be very low [5-7]. Theoretical risk of cytological dissemination of occult malignancy in the peritoneal cavity after morcellation has been evaluated. A study by Von Bargen et al revealed 1.2% incidence of occult malignancy in benign gynaecological surgeries with no case of leiomyosarcoma [8]. Graebe et al. [9] observed 0.22% risk of sarcoma after uterine morcellation. The prevalence of uterine malignancy among 40,000 women undergoing myomectomy with or without contained morcellation was found to be 0.09% and 0.18% respectively [10]. Higher incidence of uterine malignancies reported by Perkins et al. [11] may be due to the inclusion of all premalignant and malignant uterine pathologies in his study.

## Do we have Promising Solutions?

FDA ban on the use of power morcellation left negative impact on surgical outcomes and health costs, therefore confronted by these obstacles surgeons came out with novel approach of contained morcellation. Various studies have reported feasibility as well as success of this approach and no difference was observed in the perioperative outcome to that of uncontained system [12-14]. Abdominopelvic washings before and after laparoscopic morcellation with containment showed no evidence of cytological dissemination [15]. Cohen et al detected dye leak in some trials but many authors reported no spillage or bag related failures in contained morcellation of upto 2Kg specimen [16-20]. Authors have observed upto 26 minute increase in operative time in contained morcellation as compared to uncontained with similar outcome [11,12].

Contained vaginal morcellation although seems to be an alternative option but risk of bladder, bowel injuries and atrophic vagina in old age group limits its application. Potential risk of

cytological dissemination in this procedure further demand need of new resistant devices.

Laparotomy, minilaprotomy or vaginal hysterectomy definitely remain possible option to avoid tissue morcellation but at an increased cost and surgical complications.

### Future Perspectives

There is no doubt that prognosis of leiomyosarcoma gets worsened by distant spread but data on the oncological risk of morcellation needs further validation. The largest data till date of morcellated leiomyosarcoma had shown significantly worse prognosis as compared to open surgery but interestingly out of these 41 patients only one had laparoscopic morcellation and majority of them underwent cold knife morcellation through minilaprotomy [23, 24]. Another important thing to be noted is that combined mortality from minimum invasive surgery with potential risk of malignancy would be less than the open hysterectomy.

There is no ideal way to predict the malignant potential of fibroid as none of imaging techniques or sociodemographic factors seem promising. Does it worth to abandon all minimal invasive surgeries at the given risk of occult malignancy. The take away from the literature is that any kind of tissue disruption at the time of surgery worsens the prognosis. The clinical implications of the same can be extrapolated to the non-invasive treatment like MRI guided, laser ablation or uterine artery embolization which leave disrupted tissue inside the body.

Take home message is that it would not be justified to counsel all patients of fibroids for open myomectomy and hysterectomy. There should be thorough discussion with patients regarding pros and cons of laparoscopic surgery and morcellation. Further research should focus on new innovative techniques of contained morcellation and alternatives of specimen retrieval.

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