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transanal Total Mesorectal Excision [taTME]- The new kid on the block or a false dawn?

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Introduction of new surgical techniques remains a significant challenge. The evolution of surgery is essential to improve patient outcomes, with the utilization of new technology and approaches, aiming to counter existing difficulties and deficiencies in current management. It is essential that new techniques are evaluated methodically with the aim of maintaining patient safety and avoiding peaks of new complications such as bile duct injuries with the

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introduction of laparoscopic cholecystectomy whilst minimising false positives such as the apparent increase in port site metastases in laparoscopic colorectal resections, which delayed the more generalised introduction of this approach.

Rectal cancer continues to be a difficult problem to solve. It should be remembered that one of the core principles of rectal cancer resection, that of total mesorectal excision with sharp dissection, gained notoriety through a personal 'crusade' by an individual surgeon, Bill Heald, from a small district general hospital. It was never tested in a randomised controlled trial, but excellent results from small cohort studies, aligned with demonstrable pathological explanation, resulted in a number of countries adopting the technique through educational courses, and subsequent demonstration of a significant national reduction in local recurrence [1].

Increased sophistication in evaluation has resulted in laparoscopic resection of rectal cancer being assessed through randomised controlled trials. Whilst a European and Korean trial demonstrated oncological equivalence of laparoscopic resection [2,3], a US and an Australasian trial did not demonstrate non-inferiority of the laparoscopic approach [4,5], analysing surrogate pathological indices, resulting in some surgeons commenting it wasn't safe to do laparoscopic rectal resection. Subsequent publication of local recurrence and survival data for the latter two studies however demonstrated no difference between a laparoscopic and an open approach in local recurrence or survival, with a lower morbidity with a laparoscopic approach [6]. The particular challenge of minimally invasive rectal

resection is in the low pelvis, particularly with a narrow pelvis in an obese male, and it was this specific challenge that generated interest in transanal total mesorectal excision [taTME]. In this issue of the journal, concern has been raised regarding the safety of taTME and how it has been introduced [7] and it is essential to critically evaluate any concerns as patient safety is paramount. There have been reports of poor outcomes from cohort studies from Norway [8] resulting in suspension of the approach however there appear to be deficiencies in patient selection and lack of neoadjuvant therapy in cases where it would usually be standard regardless of the approach. There are also reports of very good outcomes with low local recurrence and excellent survival [9]. Anastomotic complications do appear higher than that found with a doubled stapled anastomoses from above [10], which perhaps is not a surprise as the anastomosis with taTME is lower and equivalent to a hand sewn coloanal anastomosis, demonstrating a similar complication rate, but perhaps more confidence in generating a clear distal resection margin in very low rectal tumours.

So how should a new technique be evaluated safely? The framework for introduction and assessment of new techniques has been proposed by the IDEAL recommendations [11]. From the Idea, proof of concept; the Development, safety and efficacy, usually through cohort studies; the Exploration, efficacy, using registry data; the Assessment, comparative effectiveness, utilizing randomised controlled trial; and Long-term follow-up, quality assurance, usually through ongoing audit. It is interesting to note that this approach has been followed for taTME, with published international registry data, and the initiation of an RCT. The initial Australasian experience has been published [12] and taTME was introduced in

Australasia through cadaver based structured training courses with operative case proctorship and registry evaluation. Oncological and functional outcomes are currently being analysed.

Introduction of new techniques remains challenging and patient safety is paramount. It is important that assessment is methodical and structured, avoiding extreme positive and negative views, with the aim of progressing treatment strategies safely.

Disclosure
Professor Heriot and Mr Warrier both teach on industry supported taTME courses

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