# What Is The Ideal Management Strategy For Intra-Abdominal Testes?

## Evidence Level III

Controversy exists regarding the ideal surgical approach for intra-abdominal testis (IAT). Surgeons disagree regarding whether a primary orchiopexy, one- or two-stage Fowler-Stephens (FS) orchiopexy, or an alternate technique is superior; their opinions also differ regarding the ideal surgical method (i.e. laparoscopic or open). We limited our search to the past 5 years due to abundance of literature.

There appears to be a consensus regarding how to best diagnose IAT. Both ultrasound (Nijs 2007, Sharifiaghdas 2008) and MRI with or without arteriography/venography (Desireddi 2008) are insufficient for identification or localization of non-palpable testes (NPT), including IAT. Inguinal canal exploration is effective for identifying most NPT, but for high IAT, surgical exploration is necessary (e.g., Gapany 2008, Papparella 2010, Snodgrass 2007, Tang 2009).

In general, higher-quality studies report that the one- or two-stage FS procedure is often performed successfully for high IAT, while primary orchiopexy is effectively used for low IAT (e.g., Gatti 2007, Papparella 2010, Stec 2009, Tang 2009). Higher rates of success are reported for primary orchiopexy compared to the FS procedure (e.g., Moursy 2011, Stec 2009), but this is likely because primary orchiopexy is usually performed exclusively to repair low IAT, which are easier to correct than high IAT.

We only identified one systematic review comparing the one- and two-stage FS procedures for IAT (Elyas 2010), although this review was fairly low quality and contained no randomized controlled trials (RCTs). Both one- and two-stage procedures were found to be quite effective, with the two-stage procedure demonstrating a significant advantage as far as testes viability following surgery. The 2-stage procedure was, however, associated with ileus, hematoma, and infection while no complications were observed with the one-stage procedure. An additional study by Chang (2008) supported these findings. Furthermore, the long-term success rate of the two-stage FS orchiopexy has been reported at 83% (Esposito 2009); we did not identify any studies examining long-term success for the one-stage procedure.

We identified one additional systematic review (Guo 2011), which compared laparoscopic versus open orchiopexy for treatment of NPT. This review included 2 RCTs and 5 observational studies. They reported no significant advantages of laparoscopy over open procedure with regards to overall success rate, recurrence, and testicular atrophy.

There were several studies examining alternate or modified techniques for the surgical management of IAT (e.g., gradual traction rather than division of the testicular vessels; e.g., Shehata 2009, laparoscopic orchiopexies performed with a single trocar; Noh 2012) or classification systems to guide treatment (e.g., El-Anany 2007), however all were relatively small non-controlled trials.

Based on the available evidence, we recommend primary orchiopexy for low IAT and FS orchiopexy for high IAT. It is unclear whether one-or two-stage FS is superior as there are no RCTs on this topic. It is also unclear whether there are advantages of laparoscopic vs. open FS, but the available evidence suggests that the success rates are equivalent. For identifying and localizing IAT, the existing literature reports that ultrasound and MRI are not effective; instead, laparoscopy should be performed, followed by inguinal canal exploration if necessary.

Well-conducted RCTs are needed to clarify if there is a benefit to either one- or two-stage FS orchiopexy, and if there is a benefit to conducting open or laparoscopic surgery for intra-abdominal testes.

Acknowledgement: We thank Emily Chan for her work on this review.

The full systematic review can be found here.

## Systematic Reviews

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## Other Study Designs

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