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Surgical management of diastasis rectus abdominis in the postpartum patient: the robotic option

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Abstract

Background. Diastasis rectus abdominis (DRA) is very prevalent following pregnancy, affecting up to 89% of women at 6 weeks postpartum and persisting in approximately one-third after 12 months (Sperstad *et al.* 2016). Beyond the cosmetic implications, DRA is associated with pain, abdominal wall weakness, pelvic floor dysfunction and impaired quality of life (Olsson *et al.* 2023; Bracale *et al.* 2025). Despite its frequency, management of this condition remains heterogeneous, with variable thresholds for intervention, and there is a proliferation of conflicting, frequently unverified information disseminated through social media (Giagio *et al.* 2025).

Aim. This study outlines a structured, evidence-based approach to the assessment and management of postpartum DRA. Core components include: definitions, incidence and risk factors; clinical and radiological assessment; non-operative management and current guideline recommendations; and the evolution of minimally invasive and robotic approaches. The discussion draws on the experience of a single surgeon, who introduced robotic transabdominal retromuscular (rTARM) repair as an approach to the management of postpartum abdominal wall insufficiency.

Discussion. Effective management of DRA begins with a structured assessment incorporating functional testing, palpation and targeted imaging, particularly in the presence of concomitant hernias or complex anatomy (Bracale *et al.* 2025). Management requires an integrated multidisciplinary approach that combines conservative rehabilitation, patient education, and when indicated, surgical reconstruction. The TOR [training, operative intervention and rehabilitation] framework (Olsson *et al.* 2023) offers a pragmatic model for comprehensive care. Physiotherapy is fundamental to optimizing core stability and function, and should precede any surgical consideration. However, substantial or symptomatic DRA rarely resolves without an operative intervention, and conservative management is often insufficient to achieve meaningful aesthetic improvement (Mommers *et al.* 2017), underscoring the need for clearly defined surgical thresholds. Surgery is appropriate for patients with persistent symptoms or functional impairment following conservative management, or in the presence of a coexisting ventral or umbilical hernia (Emanuelsson *et al.* 2016; Lappen *et al.* 2016; Strigård *et al.* 2016; Hernández-Granados *et al.* 2021). The repair may be performed using an open or minimally invasive approach, with the choice guided by patient factors, surgeon expertise and available resources (Forester & Sadiq 2023; Medina *et al.* 2024). Robotic techniques enhance visualization, dexterity and ergonomics, and reduce wound morbidity and facilitate a faster recovery (Reddy *et al.* 2023). The novel "bottom-up" rTARM approach enables precise plication and restoration of the abdominal contour through three small, cosmetically concealed incisions along the underwear line (Hookway-Becares *et al.* 2025). Intraoperative transillumination with the robotic light source enhances visualization of the defect, and provides accurate, real-time confirmation of successful plication (Hayward *et al.* 2025). Early

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institutional experience with 12 patients demonstrated very favourable outcomes, with a median console time of 76 min, a median length of stay of 1.5 days and high patient satisfaction, and no postoperative complications or early recurrences (Hookway-Becares *et al.* 2025). However, in patients with significant pannus or lipocutaneous redundancy, an open operation may be necessary to achieve optimal outcomes. Any surgical intervention should occur within a structured pathway incorporating preoperative physiotherapy, weight optimization and postoperative rehabilitation.

Conclusion. Physiotherapy remains the foundation of DRA management, although its effectiveness is limited in large or hernia-associated separations, and it often fails to deliver the desired aesthetic result. The rTARM mesh repair option offers an anatomically precise, minimally invasive option that achieves excellent outcomes in carefully selected patients, typically those with a body mass index below 30 and minimal lipocutaneous redundancy. When integrated into multidisciplinary pathways incorporating preoperative optimization and structured postoperative rehabilitation, this approach provides a durable restoration of abdominal wall function and a sustained improvement in quality of life. However, as a relatively novel technique, further research, including longitudinal and comparative outcome studies, is needed to substantiate these early results and refine patient selection.

Keywords: diastasis rectus abdominis, postpartum, robotic transabdominal retromuscular mesh repair, surgical management .

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