Exenterative Surgery for Squamous Cell Carcinoma Arising from Pelvic Organs of Cloacal Origin

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In recent decades, there has been increasing interest in extended radical resection for locally advanced and recurrent rectal cancer, which is now well established as the standard of care. Exenterative surgery, however, also plays an important role in the management of squamous cell carcinoma (SCC) of the anus and lower genitourinary tract. Pelvic exenteration was first described by Alexander Brunschwig in 1948 as a palliative procedure for local control of advanced cervical SCC.¹ At this time, the standard treatment for cervical cancer was radium and deep X-ray therapy, and local recurrence was a common yet mostly unsalvageable situation, where insidious disease progression (often without distant metastases) would eventually cause intestinal and urinary obstruction, tumor fungation, and intractable pain. In the 1950s and 1960s, this new ultra-radical surgical approach was applied to advanced tumors arising from other pelvic viscera, including the anus, vulva, vagina, cervix, rectum, and prostate.² Since these early pioneering periods and as exenteration surgery has evolved in more recent decades, the focus of the literature and many specialist units has been increasingly directed toward patients with locally advanced and recurrent rectal cancer.

Despite the dramatic progress made in patients with rectal cancer, salvage surgery remains the only potentially curative option for patients with recurrent anal or genitourinary SCC, or in some situations of incomplete tumor response to definitive chemoradiotherapy. This is highlighted by Smith and colleagues in this issue, as they report the outcomes of selected patients undergoing radical multivisceral resection for advanced anal and genitourinary SCC at Peter MacCallum Cancer Centre, Melbourne, Australia.³ The authors report an impressive rate of R0 resection (81.5% in patients undergoing surgery with curative intent), which translated to 59% disease-free and 70% overall survival at 24 months and, importantly, was achieved with acceptable morbidity. While 2-year survival is a little premature for strong conclusions, these data add to the existing literature that supports the role of radical salvage surgery in patients with recurrent or persistent anal or genitourinary SCC.

The anus, vulva, vagina, and lower cervix share a common embryological origin from the cloaca and often display similar oncological behavior. These tumors may be multifocal and aggressive, with a tendency to recur locally after multimodal chemotherapy and radiotherapy, with or without radical resection. These observations have led to a previously described policy at our unit where SCC arising from pelvic organs of cloacal origin are considered together with therapeutic chemoradiotherapy the upfront treatment, while ultra-radical resection is required if any attempt at salvage is to be pursued.⁴

Perineal wound complications remain a major source of morbidity following pelvic exenteration and can be particularly problematic in patients with anal and vulval SCCs, which arise inferior to the levator ani and the

urogenital diaphragm and tend to widely infiltrate the adjacent perineal or perianal soft tissues. This typically requires a wider perineal skin excision compared with advanced rectal tumors to excise completely the “inferior compartment” and ensure a clear resection margin. This wide excision is imperative in patients who have previously required abdominoperineal resection for anal SCC and where postradiotherapy tissue damage includes fat necrosis and induration of the skin combined often with tumor fungation, which can make it difficult to assess the extent of tumor invasion. The more radical perineal approach required in these more complex exenterative operations results in a large skin defect and a myocutaneous flap, commonly the vertical rectus abdominus myocutaneous (VRAM) flap, often is required for tension-free skin closure (93.5% of patients in the Peter MacCallum series).^{3,5} While the VRAM flap allows wound closure in these patients, one limitation of their use is that VRAM flaps tend not to have sufficient bulk to fill the dead space in the pelvis after total pelvic exenteration in order to prevent pelvic abscess formation and preclude translocation of small bowel or perineal herniation (features of the “empty pelvis syndrome”). Perineal wound complications and empty pelvic syndrome may have contributed to the prolonged length of stay reported by Smith et al.³ (32-day mean length of hospital stay, range 8–122 days).

Locally recurrent and re-recurrent SCCs of the anus or lower genitourinary tract present several management challenges and extensive multivisceral resection is generally required if salvage surgery is undertaken, often with composite bone resection and myocutaneous flap repair. In this edition of the journal, Smith et al. have demonstrated

that these more complex exenterative procedures can be performed safely in specialized units with acceptable morbidity and a reasonable chance of R0 resection and therefore long-term survival.

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