

Number: 11245

Title: Preservation of the Gluteus Maximus Blood Flow Contributes to Reduce Postoperative Complications Following Pelvic and Sacrum Tumor Resection

Authors

Toru Akiyama, Kazuo Saita

Email

Toru Akiyama: toruakiyama827@jichi.ac.jp, Kazuo Saita: saita@saitama-med.ac.jp

Number: 11245

Background:

Pelvic and sacral tumor resection is challenging, and is associated with considerable mortality and high morbidity. The difficulty of pelvic resection includes the difficulty in controlling the postoperative complications. Infection and wound healing problems are the most frequent postoperative complications that occur after pelvic tumor resection. Both of these problems are closely related to poor local blood flow.

Purposes: We aimed to assess 1: the intentional preservation of the gluteus maximus blood flow with CT or MRI and 2: the influence of the intentional preservation of the gluteus maximus blood flow on the postoperative complications following pelvic tumor resection.

Patients and Methods:

From 2010 to 2014, a total of 14 pelvic and sacral tumor resections were performed; these included nine internal hemipelvectomies, two cases of intralesional resection and curettage, two sacrectomies and one external hemipelvectomy. The types of internal hemipelvectomies were five P1 cases, one P1/4 case, two P2/3 cases and one P3 case. During all operations, the preservation of inferior gluteal arteries were confirmed under direct vision. Approximately three months after each surgery, the blood flow of the inferior gluteal arteries, the feeder arteries of the gluteus maximus, was evaluated by computed tomography (CT) or magnetic resonance imaging (MRI). The main outcomes assessed included postoperative complication and local recurrence.

Results:

The preservation of the blood flow of the inferior gluteal arteries was confirmed by postoperative CT or MRI in all patients. The mean follow-up was 36.3 months (2-56 months). The postoperative complication rates were 21.4% (three out of the 14 operations), but no patients experienced a postoperative deep infection. Two patients suffered from skin necrosis and one patient had a wound hematoma. Wide margins were achieved in all patients except for the case with intentional intralesional tumor resection curettage. There was no tumor recurrence in any case. One patient died of brain metastasis six months after the operation. All other patients achieved complete disease-free survival.

Conclusion:

The reported overall complication rates, wound infection rates and flap necrosis rates following pelvic and sacral tumor resection ranged from 45 to 60%, 29 to 77%, 26 to 80% respectively. Our data demonstrate a lower complication rate compared with that in previous reports. Especially, there were no deep infection case in our cases. We therefore conclude that the intentional preservation of the inferior gluteal arteries contributes to reducing the postoperative complication rate.