EN BLOC EXTERNAL ILIAC VESSEL RESECTION AND RECONSTRUCTION IN CYTOREDUCTIVE SURGICAL PROCEDURES AT A TERTIARY HOSPITAL IN THE PHILIPPINES

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BACKGROUND

Advanced tumors affecting the lateral pelvic compartment, especially around the iliac vessels, are challenging to treat. Traditionally, involvement of major iliac vessels ruled out attempts at curative surgery. However, recent advances in cytoreductive surgery have shown that *en bloc* resection, and reconstruction of these vessels, is feasible in carefully-selected patients. This study aimed to explore the surgical and pathological outcomes of these procedures at a tertiary referral center in the Philippines.

METHODS

A review of our operative database over the last six years was conducted. The study included all patients who underwent an *en bloc* resection and reconstruction of the external iliac artery and/or vein from January 2019 to September 2024. Data collected included: patient demographics, diagnosis, and surgical and pathological outcomes. Frequencies and percentages were then reported.

RESULTS & OUTCOMES

Between January 2019 and September 2024, six abdominopelvic surgeries with *en bloc* resection and reconstruction of the external iliac vessels were performed at PGH. The mean age of the patients was 58 years (range 43 to 79 years), with the majority being female (M:F ratio 1:5). Most patients (67%) had known malignancies and were being treated for tumor recurrence or progression.

TABLE 1. Baseline characteristics and outcomes of en bloc external iliac vessel resection-reconstruction. PGH,2019-2024.

Patient	Age/ Sex	Diagnosis/ Primary tumor	Previous abdominal surgery (Years prior to iliac resection)	Previous chemo/ radiotherapy (cycles)	External iliac vessel involved	Graft used	Post-op length of stay (days)	Reintervention		Residual tumor classification
								30 days	1 year	
1	50/F	Tumor recurrence from uterine adenocarcinoma	Cesarean section (20 years)	Chemotherapy Carboplatin, Paclitaxel (6) Brachytherapy	Artery and vein, right	PTFE	7	None	Yes (Graft explantation + femoral-femoral bypass)	R1
2	43/F	Tumor recurrence from descending colon adenocarcinoma	Extended left hemicolectomy, appendectomy (2 years)	Chemotherapy FOLFOX (8) FOLFORI (4)	Artery and vein, right	PTFE	10	None		R1
3	70/F	Spindle cell malignancy, right pelvis	Cesarean section (33 years)	None	Artery, right	Dacron	9	None		R0
4	52/F	Tumor progression from uterine leiomyosarcoma	Exploratory laparotomy, extrafascial hysterectomy, bilateral salpingo-oophorectomy, bilateral lymph node dissection (1 year)	Chemotherapy Gemcitabine-Docetaxel (3) Cisplatin-Doxorubicin (6)	Artery and vein, right	PTFE	16	Graft throm-bectomy (postop day 1)	None	R0
5	51/F	Tumor recurrence from sigmoid adenocarcinoma	Cesarean section (25 years) Laparoscopic sigmoidectomy (1 year)	Chemotherapy CapeOx (4)	Vein, left	Dacron	6	None		R0
6	79/M	Retroperitoneal liposarcoma	None	None	Artery and vein, right	PTFE (vein), Dacron (artery)	26	Graft throm-bectomy (postop	None	R1

								day 1)		

In 4 of 6 cases, both iliac artery and vein were involved. The interposition grafts used were polytetrafluoroethylene (PTFE) and polyester (Dacron), depending on size matching of native vessel and available graft. The average postoperative length of stay (LOS) was 12.3 days (range 6 to 26 days). There were no perioperative deaths or limb losses, but half of the patients required reintervention. Two patients underwent re-exploration and graft revision for acute graft thrombosis on the first postoperative day, while one patient needed graft explantation and peripheral bypass due to infection a year later. Although half had an R1 resection, all vascular margins were negative for tumor.

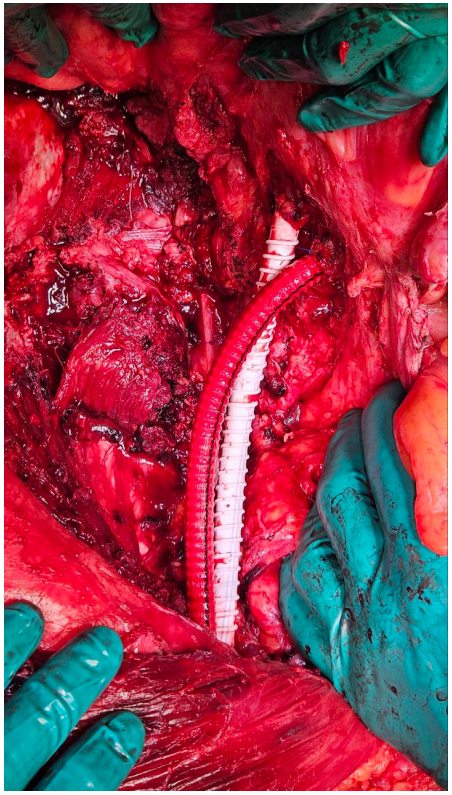

Figure 1. External iliac artery (Dacron) and vein (PTFE) reconstruction. PGH, 2024

DISCUSSION & CONCLUSION

Among our cases, vascular involvement typically affected both arteries and veins. When the iliac vessels are involved, surgery often required removing both due to their proximity. The most ideal conduit for reconstruction is still unclear, but prosthetic grafts are often preferred over autogenous grafts due to their ease of use and for having fewer complications, especially for patients needing postoperative radiotherapy.

Complications from vascular reconstruction, like graft thrombosis and infections, have been documented. Prosthetic graft infections can occur at implantation due to contamination by the surgical team or colonization by microorganisms. Preventive measures include proper skin preparation, limiting preoperative stays and operating times, and using antimicrobial prophylaxis close to incision time and reloading during lengthy procedures. Furthermore, vascular reconstruction alongside digestive surgeries has a higher infection risk. One way to mitigate this risk is by separating the surgical fields of vascular resection and reconstruction (i.e. intraperitoneal and inguinal regions) by performing a femoral-femoral bypass before, or during the initial surgery. Cancer, being a prothrombotic state, puts patients at risk for systemic thromboembolism and in turn, graft thrombosis. For cancer surgeries with vascular reconstruction, routine postoperative anticoagulation with low molecular weight heparin (LMWH) is recommended, unless contraindicated.

At present, vascular invasion should not be a limitation to being able to perform curative surgery. Advanced surgical techniques and dedicated vascular teams make oncologic resection for advanced tumors with vascular involvement feasible, offering outcomes similar to disease that is free of vascular involvement.

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