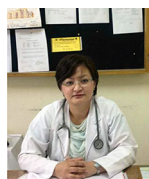


Gonadal Vein Graft for Maintaining Renal Circulation After a Complication During Para-Aortic Nodal Dissection: A Case Report

Pesona Grace Lucksom¹ · Jaydip Bhaumik¹ · Gautam Biswas² · Sujoy Gupta³ · Basumita Chakraborti¹

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About the Author



Dr. Pesona Grace Lucksom was born on 22 July 1981. She graduated from Burdwan University, West Bengal, India, in 2004, with a Bachelor of Medicine, Bachelor of Surgery (MBBS) Degree and obtained a Master's Degree from West Bengal University of Health Sciences, India, in 2009. She has worked as a consultant Gynaecologist under National Rural Health Mission and under Government of Sikkim Health Services. She is currently working as an Assistant Professor in the Department of Obstetrics and Gynaecology in Sikkim Manipal Institute of Medical Sciences, Sikkim. She is usually invited as a faculty in the east zonal conferences of Obstetrics and Gynaecology in India. She has great concern for the health of the people of rural areas where medical facilities are very difficult to reach; hence, she actively participates in and organizes health camps to reach out to the needy. She is now training as a gynaecology oncology fellow at Tata Medical Center

Kolkata, with an intention to provide oncology services to the people in Sikkim.

Dr. Pesona Grace Lucksom, in the Department of Gynaecology Oncology, Tata Medical Center, Kolkata, West Bengal, India; Dr. Jaydip Bhaumik, in the Department of Gynaecology Oncology, Tata Medical Center, Kolkata; Dr. Gautam Biswas, in the Department of Plastic and reconstructive surgery, Tata Medical Center, Kolkata, West Bengal, India; Dr. Sujoy Gupta, in the Department of Urooncosurgery, Tata Medical Center, Kolkata, West Bengal, India; Dr. Basumita Chakraborti, in the Department of Gynaecology Oncology, Tata Medical Center, Kolkata, West Bengal, India

✉ Pesona Grace Lucksom
pesonadoc@gmail.com

Jaydip Bhaumik
jaydip.bhaumik@tmckolkata.com

Gautam Biswas
gautam.biswas@tmckolkata.com

Sujoy Gupta
sujoy.gupta@tmckolkata.com

Introduction

Retroperitoneal lymph node dissection has been a part of surgery in gynaecological malignancies. However, its role in many cases has become controversial. Systematic para-aortic node dissection has been defined as “complete removal of all fat and nodal tissues surrounding the aorta,

Basumita Chakraborti
basumita.chakraborti@tmckolkata.com

¹ Department of Gynaecology Oncology, Tata Medical Center, Kolkata, West Bengal, India

² Department of Plastic and Reconstructive, Tata Medical Center, Kolkata, West Bengal, India

³ Department of Urooncosurgery, Tata Medical Center, Kolkata, West Bengal, India

inferior venacava (IVC) and renal vessels from the crossing of left renal vein (LRV) cranially to the midpoint of the common iliac vessels caudally” [1]. The removal of these lymph nodes needs expertise as there is a danger of the major vessel injury during the surgery. We would like to report a case in which there was an accidental injury to the left renal vein during para-aortic node dissection which had led to the decision for nephrectomy but presence of left gonadal vein helped restore the normal function of an important organ of our body, i.e. kidney. This method of renal vein transposition has since been employed by others with satisfactory results in nutcracker syndrome; however, such method using gonadal vein has not been reported yet.

Case History

A 39-year old, mother of one child, attended gynaecology oncology outpatient department of our institute on 11th September 2015 with a chief complain of menorrhagia for 1 year. Ultrasonography done earlier on August 2015 showed fibroid 8.1×6 cm with thickened endometrium following which she had hysteroscopic guided endometrial sampling. Histopathology revealed endometrial adenocarcinoma. She had no co-orbidities, and the clinical examination findings were normal. Review of the biopsy was serous carcinoma with clear cell changes. Staging laparotomy was done on September 2015 using a midline incision extending above umbilicus. There were no ascites and no abdominal deposits. Except for the uterus being 16 weeks in size, all other findings in the pelvis were normal. Bilateral pelvic lymph node dissection was done and an enlarged node (1.5 cm) was detected on the right internal iliac region. Extrafascial hysterectomy with bilateral salpingo-oophorectomy and total omentectomy was performed. Peritoneal incision was extended along ileo-caecal junction to ligament of Treitz. Duodenum kocherized and para-aortic area exposed. Lymph node chain removed up to the renal vein, preserving IMA and sympathetic chain. During the removal of the para-aortic node with the help of ligasure, the lower border of renal vein was accidentally clamped and cut along with the nodal chain. There was torrential bleeding, hence, to identify the site of injury, the skin incision was further increased for better exposure. The rent was found to be on the lower border of LRV near its junction with the IVC. The rent had increased to more than half of the renal vein circumference, and it was sutured and haemostasis achieved. Uro surgeon evaluated the renal circulation and was of the opinion that residual patency of the LRV was not adequate for functioning of the left kidney. Left renal vein was mobilized so that it could be re-anastomosed into the venacava; however, the length of the remaining renal vein was inadequate to reach the venacava,

and hence, the decision for nephrectomy was taken. Ice packing of the left kidney was done while the plans for saving the kidney were being made by the joint team of surgeons. Left gonadal vein was planned as a venous bypass as its length was adequate for the anastomosis. The stump of the damaged renal vein was tied, and the venous blood of the left kidney was diverted through an end to side anastomosis of the left gonadal vein with the venacava (Fig. 1). Outflow was checked using the “milking test”, and the patency of the anastomosis was found to be adequate for keeping the left kidney functional; hence, the decision for left nephrectomy was cancelled. Post-operative period was uneventful. Patient was kept in ICU for 2 days for observation only. Our fear was not yet over as there was a danger of the newly created renal vein being thrombosed. USG Doppler of the renal veins was done on post-operative day 3 to evaluate the same (Fig. 2) which was normal, and she was fit for discharge on day 4. Final histopathology was endometrial high-grade serous carcinoma, > 50% myometrial invasion with nodes negative for involvement (Stage IB). She is presently doing well on follow-up.

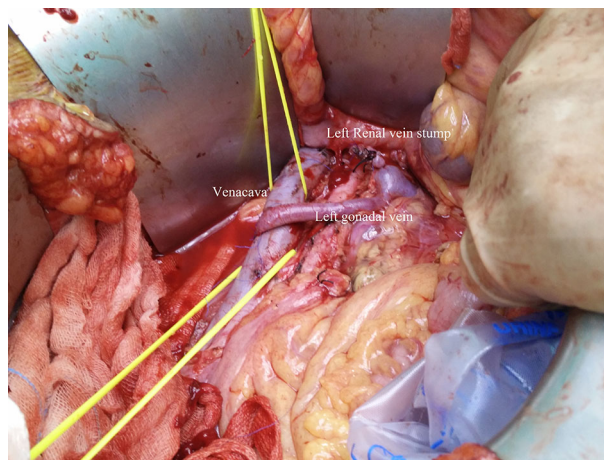


Fig. 1 Anastomosis of left gonadal vein with venacava

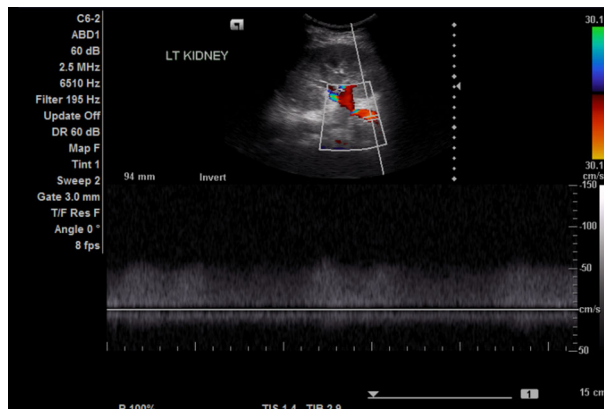


Fig. 2 Doppler of newly formed renal vein

Discussion

Para-aortic nodes being located over the major vessels are not void of grave complications. Systematic para-aortic node dissection requires removal of nodes up to the crossing of the left renal vein, and trauma to the renal vein is one dreaded complication which has not been published in literature, hence, neither the treatment alternatives. Treatment of the left renal vein damage with transposition of the gonadal vein as a replacement for renal vein has not been reported. Transposition of the left renal vein (LRV) into the distal IVC for treatment of “Nutcracker syndrome” caused by compression of the LRV between the superior mesenteric artery and the aorta which results in left renal and gonadal venous hypertension was first suggested by Stewart [2]. This method of renal vein transposition has since been employed by others with satisfactory results in nutcracker syndrome. There are no other studies mentioning the use of gonadal vein as an alternative for LRV. In our case report, using the gonadal vein as an alternative to the left renal vein saved the woman from nephrectomy. These procedures can therefore be kept in

mind while doing para-aortic node dissection which forms an essential part of staging surgery in malignancies so that fear of complications such as renal vein injury may not lead to compromise in surgical staging of the women suffering from malignancy.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Informed consent Informed consent was obtained from all individual participants included in this study.

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