

# INFERIOR VENA CAVA LIGATION IN PATIENT VICTIM OF GUNSHOT WOUND

---

***Talita Dourado Rocha***

Getúlio Vargas State Hospital – Rio de Janeiro/ Rj

***Laura Silva de Oliveira***

Getúlio Vargas State Hospital – Rio de Janeiro/ Rj

***Rayanne de Araujo Silva***

Getúlio Vargas State Hospital – Rio de Janeiro/ Rj

***Victor Hugo Peixoto Machado***

Getúlio Vargas State Hospital – Rio de Janeiro/ Rj

***Alex Lima Sobreiro***

Getúlio Vargas State Hospital – Rio de Janeiro/ Rj

***Natália de Oliveira Duarte Diniz***

Getúlio Vargas State Hospital – Rio de Janeiro/ Rj

***Gabriel Henrique Lamy Basílio***

Getúlio Vargas State Hospital – Rio de Janeiro/ Rj

***Marcelo de Avila Trani Fernandes***

Getúlio Vargas State Hospital – Rio de Janeiro/ Rj

***Emerson Wesley de Freitas Cordeiro***

Getúlio Vargas State Hospital – Rio de Janeiro/ Rj

All content in this magazine is licensed under a Creative Commons Attribution License. Attribution-Non-Commercial-Non-Derivatives 4.0 International (CC BY-NC-ND 4.0).



Introduction: Injury to the abdominal vascular structures are the most laborious and difficult for patients who are victims of penetrating abdominal trauma, being the main cause of death in these cases. Mortality varies according to the vascular injury involved and other associated injuries. The magnitude of these injuries is related to their anatomical location, the difficulty of intraoperative exposure and the vigorous hemorrhage. Inferior vena cava (IVC) trauma is related to gunshot and stab wounds, with a high mortality rate, from 33 to 66%, with the infrarenal segment being the most affected. Approximately 30-50% of patients die in the pre-hospital environment and 34-57% of living patients die in-hospital. Infrarenal IVC ligation is a reality in the context of damage control surgery, so we brought a case report on the performance of this technique and its adversities.

Case report: Male patient, 33 years old, without comorbidities, admitted to the trauma room of the Hospital Estadual Getúlio Vargas, victim of perforation by a firearm with an entry hole in the anterior wall of the abdomen, hemodynamically stable. He underwent exploratory laparotomy, where a transfixing lesion was seen in the duodenum and transverse colon, in addition to an expanding retroperitoneal hematoma on the right. During exploration of the retroperitoneum, extensive bleeding was evidenced through injury to the infrarenal IVC, causing hemodynamic instability after Cattell's maneuver. After unsuccessful attempts to contain the bleeding, and the patient's clinical condition worsened, requiring high-dose vasoactive amines to maintain blood pressure, it was decided to perform IVC ligation, in addition to ligation of the left renal artery, duodenal suture, transversectomy with colostomy and mucosal fistula. Patient referred postoperatively to

the ICU, due to the severity of the clinical condition, using amines in high doses. During hospitalization, the patient evolved with clinical improvement, but maintained significant edema of the lower limbs until hospital discharge, receiving outpatient follow-up. At the outpatient return, the patient was already asymptomatic and without lower limb edema.

Discussion: Regarding infrarenal IVC injury, some surgical techniques can be used, depending on the hemodynamic status and the affected segment. Most injuries can be repaired with simple suture, however, larger and more severe injuries may require more complex techniques, such as autogenous vein grafting, which require longer surgical time. Regarding the ligation of the infrarenal IVC, the literature shows that it is safe, but it can determine high morbidity, while the ligation of the adrenal IVC must be avoided due to the high mortality rate involved. Therefore, the clinical case above raises a discussion about the choice of the vascular lesion repair technique according to the patient's hemodynamic condition at admission and intraoperatively and the follow-up of the affected IVC.

## REFERENCES

1. CLEINALDO, A. C et.al. Traumatismos de veia cava inferior. Rev. Col. Bras. Cir, Rio de Janeiro, Vol. 32, Nº 5, Sept./Oct. 2005
2. LIMA, F.M et.al. Reconstrução de veia cava inferior infra-renal com enxerto espiralado de veia safena magna. J Vasc Br, Vol. 3, Nº 3, p. 261- 264, 2004.
3. REYNOLDS, C.L, et. al. REBOA for the IVC? Resuscitative balloon occlusion of the inferior vena cava (REBOVC) to abate massive hemorrhage in retrohepatic vena cava injuries. J Trauma Acute Care Surg, Greenville, North Carolina, Vol. 83, Nº 6, p. 1041-1046, 2017.
4. SULLIVAN, P.S, et.al. Outcome of ligation of the inferior vena cava in the modern era. The American Journal of Surgery, Atlanta, GA, Vol. 199, N ° 4, p. 500–506, 2010.
5. TURPIN, I et.al. Injuries to the Inferior Vena Cava and Their Management. The American Journal of Surgery, Torrance, California, Vol. 134, p. 25-32, July 1977.
6. VAN ROOYEN, P.L, et.al. Inferior vena cava injuries: A case series and review of the South African experience, Injury, Department of Surgery, University of Pretoria and Kalafong Hospital, South Africa, Elsevier, 2014.