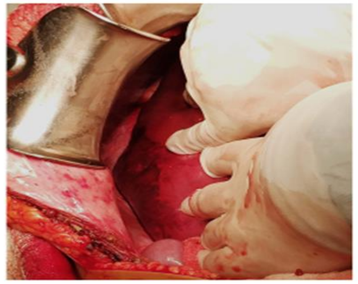
# PNEUMATIC PACKING METHOD AS A HEMOSTATIC METHOD FOR LIVER INJURIES

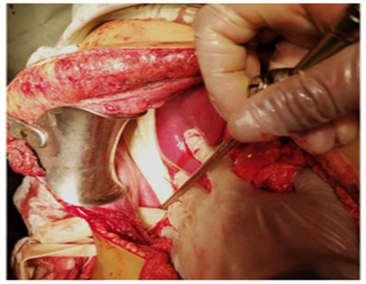

## BOLIVIAN JAPANESE INSTITUTE OF GASTROENTEROLOGY

MAURICIO PASTEN MD FACS


## Introduction

The liver is the largest solid abdominal organ and is one of the most commonly injured organs in abdominal trauma. Patients with high-grade liver injuries have high rate mortality, between 40 to 80 %. There are many hemostatic techniques to treat these injuries, like packing, liver resection, hepatectomy and liver transplantation. The usual method describe is the gauze packing, but have complications like re operations and bleeding when is removed.









Yellow arrow shows the pneumatic balloon position

Green arrow shows the Pneumatic ballon


MAURICIO PASTEN MD FACS
BOLIVIAN JAPANESE INSTITUTE OF GASTROENTEROLOGY
dr.tulas@gmail.com




## Methods

We develop a novel technique using a pneumatic balloon, as a packing compressive method, for patient with hemodynamic instability. The patients selected for this technique were unstable patients that need blood transfusion and Intensive Care Unit manage. A midline incision made with abdominal exploration and liver mobilization was perform. Identification of the blunt trauma, we consider the use of the technique in liver injuries grade III to V. A Pringle maneuver, and liver mobilization is important, to have the lacerated area exposed. We use hem collagen as a film between the liver and the balloon, the balloon is insufflated until no bleeding is seen, and Pringle maneuver is removed. The patients are observed in the intensive care unit, the pneumatic balloon was controlled in a daily basis, and air from the balloon is removed after 72 hrs. The balloon stays in situ for at least one week. Then, if no blood from drainages appear and hemodynamic stability is achieved, the balloon is removed, without need of another surgery for this reason.

## RESULTS

Two cases of pneumatic compression method were performed at our institution, both women of 27 and 32 years old. Length of stay of 14 days. The type of injury was laceration in both cases. First with grade III and the second with grade IV liver injury. At day three we start removing the air at the compression balloons. No need of another surgery was needed in both cases. Image control shows small hematoma, in the site of laceration, and resolution 40 days after the surgery.

## Conclusion

We consider this technique safe and suitable for instable patients, but more cases are needed in order to stablish this technique for high grade liver injuries. No extra surgery was required using this technique in our experience.

## References


Chu, Q. D. (Ed.). (2018). Hepato-Pancreato-Biliary and Transplant Surgery. Beaux Books Publishing, LLC.

Richardson, J. D. (2005). Changes in the management of injuries to the liver and spleen. Journal of the American College of Surgeons, 200(5), 648-669.

Kaptanoglu L, Kurt N, Sikar HE. Current approach to liver traumas. Int J Surg. 2017 Mar;39:255-259.

Coccolini, F., Coimbra, R., Ordonez, C., Kluger, Y., Vega, F., Moore, E. E., ... & Sartelli, M. (2020). Liver trauma: WSES 2020 guidelines. World Journal of Emergency Surgery, 15, 1-15.