PORTAL VEIN EMBOLIZATION USING AN ADAPTED HYSTEROSALPINGOGRAPHY CATHETER

Klaus STEINBRÜCK, Jefferson ALVES, Reinaldo FERNANDES, Marcelo ENNE, Lúcio Filgueiras PACHECO-MOREIRA

INTRODUCTION

Advances in hepatic surgery have reduced the mortality rate after major liver resection but complications resulting from inadequate post-resection hepatic function and size remain. Portal vein embolization is an accepted and useful procedure that provides hypertrophy of the future remnant liver in order to reduce such complications. Even though percutaneous transhepatic portal vein embolization is the most used technique; there is still place for portal vein embolization via transileocolic route, especially in hospitals were interventional radiology is not available.

The objective of this study was to demonstrate one series of portal vein embolization performed through transileocolic approach, using an adapted hysterosalpingography catheter.

METHODS

Was performed portal vein embolization in 19 patients using an adapted 5Fx40cm hysterosalpingography catheter (Angiotech Medical Device Technologies, Inc., 3600 S.W. 47th Avenue Gainesville, Florida 32608 USA - Figure 1A) to stimulate growth of the future remnant liver. Indications for hepatectomy were colorectal liver metastases in all cases. Results: An adequate growth of the future remnant liver was achieved in 15 patients (78.9%) and second time hepatectomy could be done in 14 (73.7%). In one patient (5.2%), tumor progression prevented surgery. One patient presented acute renal failure after portal embolization.

Conclusions: The hysterosalpingography catheter is easy to handle and can be introduced into the portal vein with a wire guide. There were no major post-embolization complication. Its use is safe, cheap and effective.
RESULTS

An adequate growth of the future remnant liver was achieved in 15 patients (78.9%) and hepatectomy could be done in 14 (73.7%), eight to ten weeks after portal vein embolization. Four patients (21.1%) did not present a satisfactory growth of the future remnant liver, and surgery was cancelled. In one patient (5.2%), local intrahepatic tumor progression prevented second surgery. One patient had acute renal failure after the embolization procedure, but no dialysis was needed. All patients reported, after the end of anesthesia, a feeling of hangover.

FIGURE 1 – A) Hysterosalpingography catheter; B and C) the balloon system

DISCUSSION

Portal vein embolization is a recognized procedure that provides growth of the future remnant liver, thereby sustaining the possibility of extensive liver resection in patients with a predictable insufficient remnant liver volume. A recent review carried out by van Lienden et al. showed that 12.4% of portal vein embolization are still being done via transileocolic route. This fact could be justified in part by difficulties to access radiological intervention facilities to do the percutaneous approach, which is the case of our hospital. To guarantee an adequate treatment, was adapted a hysterosalpingography catheter to perform portal vein embolization. It is a balloon catheter system described by Sholkoff in 1987. It is easy to handle and can be introduced into the portal vein with a wire guide. It is not an expensive device (US$ 6 per unit) and the diameter of its balloon is 10 mm, got with 0.8 ml of saline solution, providing an effective occlusion of the right portal branch to avoid non target vessels embolization. The success rate here presented to indicate secondary hepatectomy was 73.7%, which is similar to literature rate (80%). According to Clavien’s scoring system, there was no major post-embolization complication. It is important to mention that the open approach allows an assessment of the peritoneal cavity at the time of portal vein embolization to observe the liver lesion and the presence of local affections.

CONCLUSION

The hysterosalpingography catheter is easy to handle and can be introduced into the portal vein with a wire guide. There were no major post-embolization complication. Its use is safe, cheap and effective.

REFERENCES