

8. The Desmoid Tumor Working Group. The management of desmoid tumours: A joint global consensus-based guideline approach for adult and paediatric patients. *European Journal of Cancer*, 2020-03-01, Volumen 127, Páginas 96-107.
9. Kasper B. New treatments for desmoid tumors. *Curr Opin Oncol.* 2023;35(4):292–5. Epub 2023 May 3.
10. Gounder M, Ratan R, Alcindor T, Schöffski P, van der Graaf WT, et al. Nirogacestat, a gamma-Secretase Inhibitor for Desmoid Tumors. *N Engl J Med.* 2023;388(10):898–912.
11. Papalexis N, Savarese LG, Peta G, Errani C, Tuzzato G, Spinnato P, et al. The new ice age of musculoskeletal intervention: role of percutaneous cryoablation in bone and soft tissue tumors. *Curr Oncol.* 2023;30(7):6744–70.
12. Auloge P, Garnon J, Robinson JM, Thenint MA, Koch G, Caudrelier J, et al. Percutaneous cryoablation for advanced and refractory extra-abdominal desmoid tumors. *Int J Clin Oncol.* 2021;26(6):1147–58.

Vicente Olivares-Ripoll*, Elena Gil-Gómez, Alida González-Gil, Pedro Antonio Cascales-Campos

Cirugía General y digestiva. Hospital Clínico Universitario Virgen de la ArrixacaCtra. Madrid-Cartagena, El Palmar, Murcia

*Corresponding author.

E-mail address: vicenteolivaresripoll@gmail.com (V. Olivares-Ripoll).

<http://dx.doi.org/10.1016/j.cireng.2024.03.011>
2173-5077/

© 2024 Published by Elsevier España, S.L.U. on behalf of AEC.

Response to: laparoscopic hybrid mini-ALPPS using transmesenteric intra-operative portal embolization for locally advanced intrahepatic cholangiocarcinoma



Respuesta a “mini-ALPPS híbrido laparoscópico usando embolización portal intraoperatoria transmesentérica en el tratamiento del colangiocarcinoma intrahepático localmente avanzado”

To the Editor:

After viewing the video published in your magazine, “Laparoscopic hybrid mini-ALPPS using transmesenteric intraoperative portal embolization for locally advanced intrahepatic cholangiocarcinoma”, we would like to share some of our thoughts.

First of all, we would like to congratulate the authors for satisfactorily performing such a demanding surgery, thanks to which the patient is disease-free 18 months later. Intrahepatic cholangiocarcinoma is an aggressive tumor, and the mainstay of its treatment is surgical resection with free margins. In the case of large tumors, resection may be influenced by the future liver remnant.^{1,2} Among the alternatives to overcome this difficulty is ALPPS surgery, which allows for rapid hypertrophy with a two-stage surgery.^{3–5} Although it has been related to high morbidity and mortality, careful patient selection and the appearance of variants like the mini-ALPPS have managed to improve postoperative results.⁶ However, given the case presented by the authors, we believe that other alternatives could be considered.

On the one hand, hepatic venous deprivation is a technique that adds embolization of the right and middle suprahepatic veins to classic portal embolization. Among its advantages over standard portal embolization is that it achieves a greater future liver remnant in less time, with similar safety.⁷ Therefore, it is especially indicated in tumors that affect the right liver and segment IV. Although this hypertrophy requires more time than the ALPPS intervention, it allows for tumor resection in a single intervention. Furthermore, it does not involve ligation of the inferior mesenteric vein, which is performed in the video presented.

Another alternative to consider is surgery after radioembolization.⁸ With this technique, it is possible to perform local treatment of the tumor by depositing radioactive microspheres in the tributary arteries of the tumor and, in addition, achieve contralateral hypertrophy by injecting part of the radiation into a lobar artery.^{9–11} Although achieving hypertrophy requires more time, it has the advantage of offering treatment of the tumor from the start, which may even involve a reduction in its size that facilitates future surgery. Furthermore, this circumstance enables us to select

patients with stable disease over time before surgery, which can improve oncological results by reducing recurrence rates.

The treatment of this type of tumors is challenging for the surgeon. Adequate planning is necessary to achieve resection with free margins, while guaranteeing a sufficient liver remnant. In this context, we believe that double deprivation and radioembolization may be alternatives that facilitate subsequent surgery.

Conflict of interests

The authors of this article have no conflicts of interests to declare related to the development and final results of this paper.

Funding

This research paper has received no specific funding from public, commercial or non-profit entities.

REFERENCES

1. Krenzien F, Nevermann N, Krombholz A, Benzing C, Haber P, Fehrenbach U, et al. Treatment of intrahepatic cholangiocarcinoma – A multidisciplinary approach. *Cancers*. 2022;14(2):362. <https://doi.org/103390/cancers14020362>.
2. Matsumoto N, Ebata T, Yokoyama Y, Igami T, Sugawara G, Shimoyama Y, et al. Role of anatomical right hepatic trisectionectomy for perihilar cholangiocarcinoma. *Br J Surg*. 2014;101(3):261–8. <http://dx.doi.org/10.1002/bjs.9383>.
3. De Santibañes E, Clavien PA. Playing Play-Doh to prevent postoperative liver failure: the “ALPPS” approach. *Ann Surg*. 2012;255:415–7.
4. Lang H, de Santibañes E, Schlitt HJ, Malago M, van Gulik T, Machado MA, et al. 10th anniversary of ALPPS-lessons learned and quo vadis. *Ann Surg*. 2019;269(1):114–9. <http://dx.doi.org/10.1097/SLA.0000000000002797>.
5. Balci D, Sakamoto Y, Li J, Di Benedetto F, Kirimker EO, Petrowky H. Associating liver partition and portal vein ligation for staged hepatectomy (ALPPS) procedure for cholangiocarcinoma. *Int J Surg*. 2020;82S:97–102. <http://dx.doi.org/10.1016/j.jisu.2020.06.045>.
6. Chan KS, Low JK, Shelat VG. Associated liver partition and portal vein ligation for staged hepatectomy: a review. *Transl Gastroenterol Hepatol*. 2020;5:37. <http://dx.doi.org/10.21037/tgh.2019.12.01>.
7. Guiu B, Quenet F, Panaro F, Piron L, Cassinotto C, Herrero A, et al. Liver venous deprivation versus portal vein embolization before major hepatectomy: future liver remnant volumetric and functional changes. *HepatoBiliary Surg Nutr*. 2020;9(5):564–76. <http://dx.doi.org/10.21037/hbsn.2020.02.06>.
8. Aliseda D, Martí-Cruchaga P, Zozaya G, Benito A, Lopez-Olaondo L, Rodríguez-Fraile M, et al. Pure laparoscopic major liver resection after yttrium⁹⁰ radioembolization: a case-matched series analysis of feasibility and outcomes. *Langenbeck's Archives of Surgery*. 2022;407:1099–111. <http://dx.doi.org/10.1007/s00423-022-02474-z>.
9. Riby D, Mazzotta AD, Bergeat D, Verdure I, Sulpice L, Bourien H, et al. Downstaging with Radioembolization or Chemotherapy for initially unresectable intrahepatic cholangiocarcinoma. *Ann Surg Oncol*. 2020;27:3729–37. <http://dx.doi.org/10.1245/s10434-020-08486-7>.
10. Iñarrairaegui M, Pardo F, Bilbao JI, Rotellar F, Benito A, D'Avola D, et al. Response to radioembolization with yttrium-90 resin microspheres may allow surgical treatment with curative intent and prolonged survival in previously unresectable hepatocellular carcinoma. *Eur J Surg Oncol*. 2012;38:594–601. <http://dx.doi.org/10.1016/j.ejso.2012.02.189>.
11. Gaba RC, Lewandowski RJ, Kulik LM, Riaz A, Ibrahim SM, Mulcahy MF, et al. Radiation lobectomy: preliminary findings of hepatic volumetric response to lobar yttrium-90 radioembolization. *Ann Surg Oncol*. 2009;16:1587–96. <http://dx.doi.org/10.1245/s10434-009-0454-0>.

Luis Carlos Hinojosa Arco*, Jorge Francisco Roldán de la Rua, Rocío Gómez Pérez, Miguel Ángel Suárez Muñoz

Servicio de Cirugía General y Digestiva, Hospital Virgen de la Victoria, Málaga, Spain

*Corresponding author.

E-mail address: luiscarlosha87@gmail.com

(L.C. Hinojosa Arco).

<http://dx.doi.org/10.1016/j.cireng.2024.04.020>
2173-5077/

© 2024 Published by Elsevier España, S.L.U. on behalf of AEC.