We recognize that an ultrasound-guided parasacral approach to block the sacral plexus has been described. However, that approach relies on searching the target sacral plexus below the PSIS between the sacrum and the ischial bone. With our PSPS approach, it is easy to identify the characteristic iliac bone contour ultrasonographically and ‘walk off’ the iliac bone with the ultrasound beam to identify the target sacral plexus exactly at the pelvic exit accurately. Whether the PSPS technique can compare favourably with the high success rate of using nerve stimulation alone remains to be investigated in a prospective randomized clinical trial.

In conclusion, the PSPS approach indicates an effective and easy roadmap to target the sacral plexus. When combined with a paravertebral lumbar plexus block, the PSPS allows various types of hip fracture surgery in elderly ASA class III–IV patients with good success.

Conflict of interest

None declared.

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Early primary cardiac graft failure and combined heart–liver transplantation: need for an uncommon double bypass

Editor—A 32-yr-old man was referred for combined heart and liver transplantation (CHLT) because of recurrent severe right heart failure and refractory ascites with biopsy-proven cirrhosis. Heart transplantation was first performed using the standard method of our cardiac surgery centre. Ischaemic time was 135 min. Despite the use of inotropes (epinephrine) and inhaled vasodilators (nitric oxide), mean arterial pressure (MAP) remained below 50 mm Hg because of failed cardiac contraction. A central extracorporeal membrane oxygenation (ECMO) (Carmida®, Medtronic France SA, Rueil Malmaison, France) support was used. A 130 beats min⁻¹ sinus rhythm and left atrial pressure above 10 mm Hg could thus be maintained. Epinephrine and fluid loading were adjusted to maintain MAP and central venous pressure (CVP) at 70–80 and 8–15 mm Hg, respectively.

The liver procedure started after closure of the sternum. Once the liver was completely freed, flushed heparin-coated tubes were inserted in the inferior mesenteric vein, inferior vena cava, and axillary vein and connected to a double-limb heparin-coated venovenous bypass (VVB) (Bio-Medicus®, Medtronic France SA). After caval and portal cross-clamping, the liver together with the retrohepatic cava was explanted. The graft with its caval vein was then implanted and end-to-end caval anastomoses were performed. VVB flow was set to keep the ECMO output between 3 and 4 litre min⁻¹. VVB was withdrawn after portal revascularization.

Fluid, 2000 ml 4% human albumin, and epinephrine administration were set to maintain both CVP above 8 mm Hg and MAP above 70 mm Hg. International normalized ratio (INR) ranged between 2.4 and 4. Anticoagulants and blood products were not required. During the hepatic artery and bile duct anastomoses, MAP decreased and CVP increased leading to liver congestion. An epinephrine bolus restored MAP but had no effect on CVP and liver congestion. An increment in the ECMO outflow corrected this immediately. Cold and warm ischaemic times of the liver were 11 h and 52 min, respectively. Overall transfusion amounts during CHLT were: 8 red blood pack (RBP), 4 recovered autologous unit (RAU), 23 fresh frozen plasma (FFP), 22 units of platelet (PLT), and 3 g fibrinogen. Twelve thousand units per day of heparin were administered after POD2, while INR spontaneously decreased below 2.5. ECMO was discontinued on POD15. The patient was discharged to home at POD45 with normal liver function tests.

<table>
<thead>
<tr>
<th>Time</th>
<th>PT (%)</th>
<th>V factor</th>
<th>AST/ALT</th>
<th>Bili (T/C)</th>
<th>Creat (µmol litre⁻¹)</th>
<th>Troponin (IU ml⁻¹)</th>
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<td>42</td>
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<td>16</td>
<td>90</td>
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<td>29</td>
<td>1624/1352</td>
<td>36/12</td>
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<td>114</td>
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<tr>
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<td>—</td>
<td>31/17</td>
<td>30/20</td>
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</table>
and renal function, and a 45% left ventricular ejection fraction.

CHLT is a rare multidisciplinary challenge. This case illustrates that sequential CHLT can be achieved despite early primary cardiac graft failure, using two different bypass circuits. ECMO provided the equivalent haemodynamic and metabolic stability to that obtained with cardiopulmonary bypass described for simultaneous implantation of both organs, but without heparin requirement. In our case, despite transient heart graft failure, ECMO allowed continuous and prolonged support of hepatic and renal functions (Table 1). Since the first goal of VVB was to ensure the ECMO outflow, attendant management of VVB and ECMO is simple: any decrease in the ECMO outflow has to be corrected first by an increase in the VVB outflow, and, if ineffective, by fluid loading. If MAP decreases despite adequate ECMO outflow, vasoconstrictor drugs should be given.

**Conflict of interest**

None declared.

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