

Persistent femoral lymphatic leak following Fontan surgery: Role of fluorescein dye

Sir,

As we all know, in congenital heart surgery, redosternotomy often involves the exposure of groin vessels as it is often complicated due to dense mediastinal adhesions between the substernal vascular and cardiac structures which are often stuck to the sternum. However during groin dissection, injury to the lymphatic system is not uncommon.^[1] The lymphatic leak thus caused usually goes unnoticed intraoperatively, but may become a major cause of morbidity in the postoperative period. We present a case of the Fontan procedure complicated by persistent lymphatic leak from the femoral cut down site where we used fluorescein dye intraoperatively to help us for identify the leaking site.

A 19-year-old patient, a known case of the single ventricle of the right ventricular morphology who had undergone prior bidirectional Glenn and was posted for the Fontan procedure. The preoperative cardiac tomogram showed a poor tissue plane between the sternum and mediastinal structures. Hence, as a routine precaution for redo surgeries in our center, the right femoral vessels were exposed through a right inguinal incision. Femoral vessel cannulation was although not attempted as sternotomy was uneventful. Following completion of Fontan, the inguinal wound was closed in layers after proper hemostasis. The postoperative period was complicated by persistent lymphatic leak from the femoral surgical site. The lymphatic leak was managed conservatively with pressure dressing. In spite of 1 week of conservative management, the lymphatic leak persisted. Hence, the patient was taken up for femoral wound re-exploration.

Serous collection inside the wound cavity was evacuated. For detecting the site of suspected lymphatic leakage, fluorescein a dye-soaked gauze was applied over the wound cavity [Figures 1 and 2]. The dye stained the normal tissues red, whereas the lymphatic leak appeared fluorescent green. The leak was noted in the space between the femoral artery and vein [Figure 3]. The leak was controlled with a prolene stitch. Further application of the dye did not reveal any other leaking site. The wound was then closed in layers. There was no further lymphatic leak or collection.

The use of fluorescein dye in cardiac surgery is getting wider acceptance. Fluorescein dye has been used for the detection of residual defect in cases of multiple muscular ventricular septal defects,^[2] chyle leak postrepair of coarctation of aorta,^[3] microscopic anastomosis in arterial and venous conduits,^[4] and intraoperative assessment of

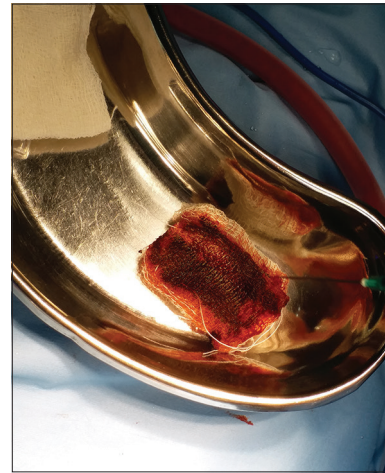


Figure 1: Fluorescein dye-soaked gauge

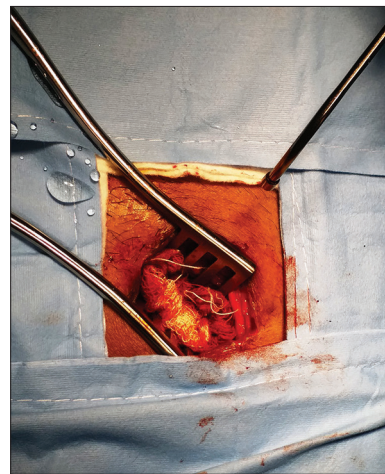


Figure 2: Dye-soaked gauge applied to the inguinal wound

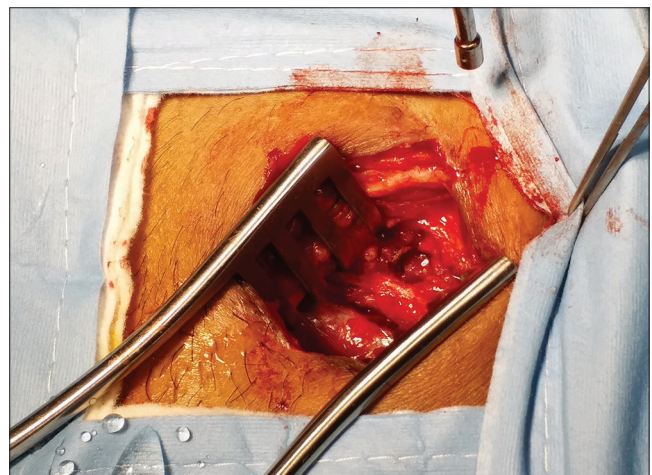


Figure 3: Site of lymphatic leak

vessel and anastomotic site patency following coronary artery reimplantation, coarctation, palliative shunts, and pulmonary artery reconstruction.^[5]

In our case, the patient developed persistent lymphatic leak following femoral cut down. Lymphatic leaks in the re-explored groin are often difficult to identify. The use of fluorescein dye helped us to identify the leak site instantaneously. The technique is simple, safe, and easily reproducible. Fluorescein dye can be used if the lymphatic leak is suspected during the primary surgery itself.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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