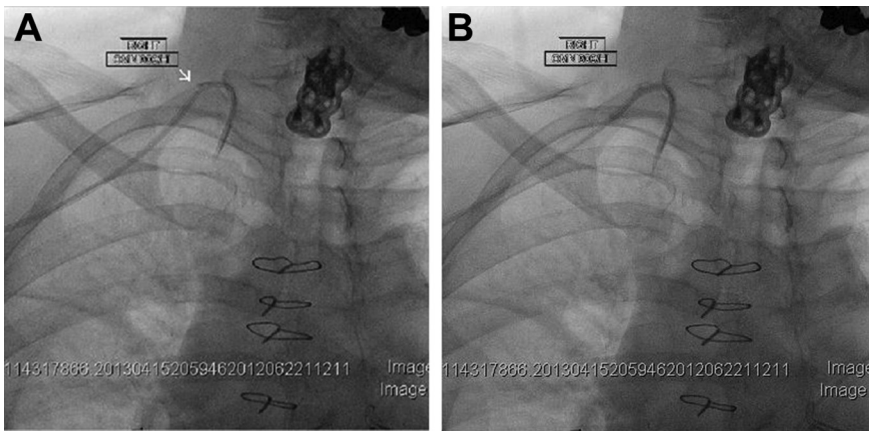

Fig 2. Fluoroscopic images (A) revealing internal jugular catheter fracture (arrow) and (B) extravasation of contrast from fracture site.

takes up a considerable amount of intraluminal caval volume and thus pushes any indwelling central line catheters to lateral positions, and in doing so creates an ideal scenario for an occult entrapment in the clamp at the time of the ICL creation. We have also observed that the energy curves show no difference if a small catheter is unintentionally clamped in the jaws of the bipolar. We typically perform greater than 50 CM-IV procedures per year, and we have found that it is extremely easy to capture any of these lines unknowingly while closing the jaws of the clamp; thus, we were motivated to present this case to highlight the potential complication of unintentional catheter ablation.

Entrapment of the catheter has two potential complications: (1) disruption, dislodgment and embolization of a catheter element and (2) potential break in the ICL line because of "protection" of the atrial wall where the catheter is trapped, resulting in failure of the line and suspected higher failure rates with the procedure itself. In our institution, if a catheter is discovered to have sustained a RF burn strike, the catheter is cut above the burn strike to prevent dislodgment, and the RF burn is repeated to ensure that the entire ICL is both transmural and contiguous.

To reduce the chance of this complication, we have changed the anesthesia protocol for cases involving the Maze procedure to use short central lines that are placed in either the left subclavian position or a short right IJ central line with tips stopping at or just beyond the innominate vein. PA catheters are initially placed to get a baseline PA pressure monitoring, but are withdrawn back and out of the way if the case permits. This single maneuver greatly reduced the "traffic" in the SVC at the time of the clamp placemen, and it has lead, in our estimation, to a significant reduction in this complication to nearly zero. Extending the T incision is an option, but this adds complication to the procedure; therefore, we favor reduction of traffic in the SVC in general.

We consulted IR for removal because it has been successful in similar events when a catheter has been entrapped with an azygous vein repair suture. We also believed that there was a high probability of success with limited complications as compared with returning to the operating room to reopen the chest and use cardiopulmonary bypass. In this particular case, we did not believe that the catheter had been melted into the tissues because it was mobile upon traction, and the defect in the catheter was easily visible radiographically.

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Isolated Huge Aneurysm of the Left Main Coronary Artery in a 22-Year-Old Patient With Type 1 Neurofibromatosis

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A 22-year-old patient with neurofibromatosis type 1 presented with acute chest pain. A computed tomography scan and coronary angiography revealed a partially thrombosed huge aneurysm of the left main coronary artery. Despite medical treatment, the patient's angina

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recurred. The patient underwent a coronary bypass grafting operation and surgical exclusion of the aneurysm. Postoperative imaging disclosed good permeability of the 3 coronary artery bypass grafts and complete thrombosis of the excluded aneurysm.

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Neurofibromatosis is a highly penetrant autosomal-dominant genetic disease with variable expressivity characterized by dysplasia of mesodermal and ectodermal tissues. Although numerous vascular malformations affecting the aorta and great vessels, cerebral, visceral and renal arteries have been described, changes in the coronary arteries have rarely been reported [1–5]. We describe here the case of a 22-year-old patient with neurofibromatosis who required cardiac bypass grafting due to thrombosis formation within a huge aneurysm of the left main coronary artery that was responsible for downstream repeated thromboembolic migration with enzymatic elevation.

A 22-year-old male patient with diagnosed neurofibromatosis type 1 presented with acute chest pain. He was a nonsmoker and had no cardiac risk factors or history of Kawasaki disease. Two members of his family were neurofibromatosis patients. Numerous café-au-lait spots were noticed on the patient's back and chest, but no cutaneous tumors or neurofibromas. His blood pressure and heart rate were within normal reference ranges.

No murmur or additional heart sound were noted on cardiac auscultation. An electrocardiogram disclosed a sinus rhythm with T waves inversion in D1, AVL, and V2 to V4, but no Q wave. Laboratory results showed an increase of the troponin concentration up to 24 μg/L. Transthoracic echocardiography disclosed no heart dyskinesis but good ventricular function, with an ejection fraction of 0.67.

A contrast-enhanced computed tomography scan revealed a large 30-mm-sized partially thrombosed aneurysm of the left main coronary artery giving rise to the left anterior descending and the circumflex arteries (Fig 1A). No other vascular malformations were noted. The coronary angiography confirmed a large aneurysm of the left main coronary artery (Figs 2A, 2B). The right coronary artery was free from coronary disease.

The patient's angina was initially controlled with medical therapy, and he was discharged with aspirin, fluindione, and bisoprolol. Ongoing episodes of chest pain with troponin elevation occurred despite medical therapy. The decision was made to perform coronary bypass grafting and surgical exclusion of the aneurysm to avoid further coronary embolism and myocardial infarction.

The operation was conducted through a median sternotomy, with bilateral internal thoracic artery (ITA) harvesting. An intrapericardiac examination revealed that the distal edges of the aneurysm were behind the pulmonary artery trunk (Fig 3). The surgical procedure consisted of 3 coronary artery bypasses. The left ITA was used as a pedicled graft to the circumflex artery, the right ITA and a saphenous vein were used as aortocoronary grafts between the aortic root and the left anterior ascending artery for the right ITA, and the first diagonal artery for the saphenous vein graft (SVG), as a "security graft." The right ITA was anastomosed on the ascending aorta through a 2 cm^2 Gore-Tex patch (W.L. Gore and Associates, Flagstaff, AZ) to limit further risk of anastomotic hyperplasia. The aneurysm was distally ligated with separated sutures on the left anterior descending and the circumflex arteries above the coronary bypass grafts, whereas the left coronary artery ostium was closed using a running suture of 4-0 polypropylene through horizontal aortotomy.

The patient was weaned from mechanical ventilation 3 hours after being transferred to the intensive care unit and required adjunctive vasopressive drugs (noradrenaline) for 3 days. The troponin concentration reached a peak of 19 μg/L at 24 hours after the operation, without any electrocardiogram ischemic changes.

The patient was discharged from the intensive care unit at day 3 and from the hospital at day 9 with aspirin and bisoprolol. A postoperative CT scan showed good permeability of the 3 coronary artery bypass grafts and almost complete thrombosis of the aneurysm, with no filling of the contrast (Figs 1B, Fig 4).

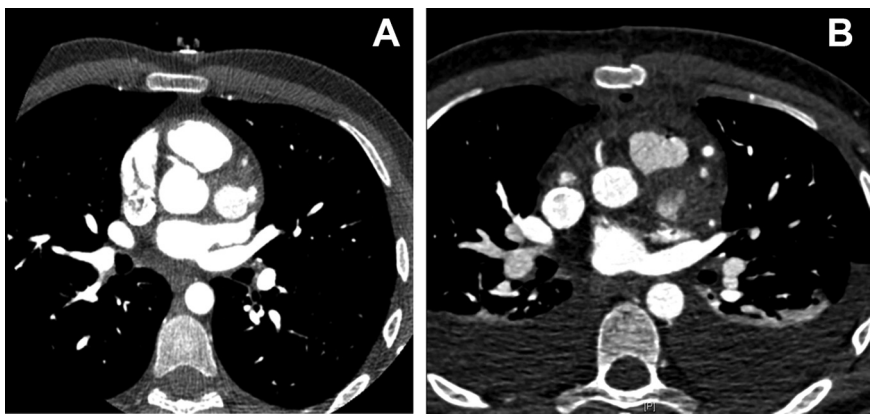

Fig 1. (A) Preoperative and (B) postoperative computed tomography scans show the left main coronary artery aneurysm. The postoperative contrast-enhanced computed tomography scan showed almost complete thrombosis of the aneurysm after surgical exclusion.