



REPUBLICAN SPECIALIZED
SCIENTIFIC AND PRACTICAL
MEDICAL CENTER OF SURGERY
NAMED AFTER ACAD. VAKHIDOV

FROZEN ELEPHANT TRUNK FOR ACUTE TYPE A AORTIC DISSECTION USING J-SHAPED UPPER MINI-STERNOTOMY



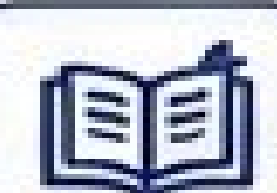
AMERICAN
HOSPITAL

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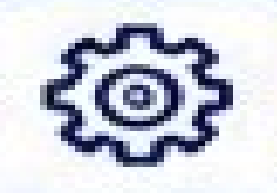
BACKGROUND

The Frozen Elephant Trunk (FET) procedure has become an established strategy for acute type A aortic dissection (ATAAD) involving the aortic arch and descending thoracic aorta. However, the procedure is traditionally performed through full median sternotomy due to its technical complexity. Minimally invasive access for complex aortic arch surgery remains limited.



OBJECTIVE

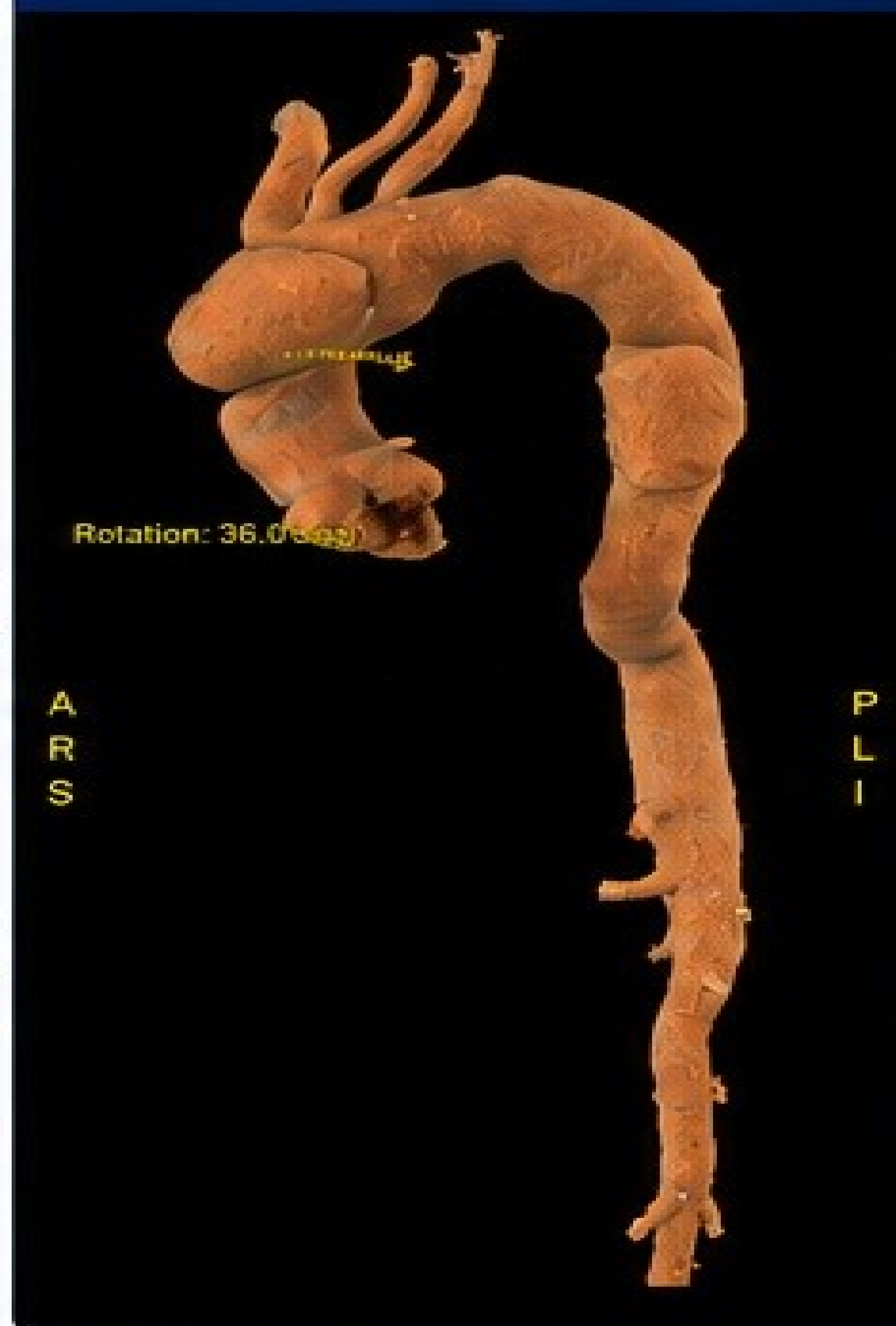
This case highlights the feasibility of performing Frozen Elephant Trunk procedure for ATAAD through a minimally invasive access.



CASE PRESENTATION

A 44-year-old male patient presenting with ATAAD extending from the distal part of the ascending aorta into the descending thoracic aorta underwent emergent surgical intervention. Cardiopulmonary bypass was established via peripheral femoral cannulation. The operation was performed through an upper mini-J sternotomy extending to the fourth intercostal space. Under moderate hypothermic circulatory arrest with bilateral antegrade selective cerebral perfusion, the ascending aorta was resected to include the lesser curvature of the aortic arch. A hybrid prosthesis was deployed into the descending thoracic aorta and fixed intraluminally under direct vision, followed by hemiarch replacement and reconstruction of the proximal aorta. Standard myocardial protection and meticulous hemostatic techniques were applied to accommodate the limited surgical exposure.

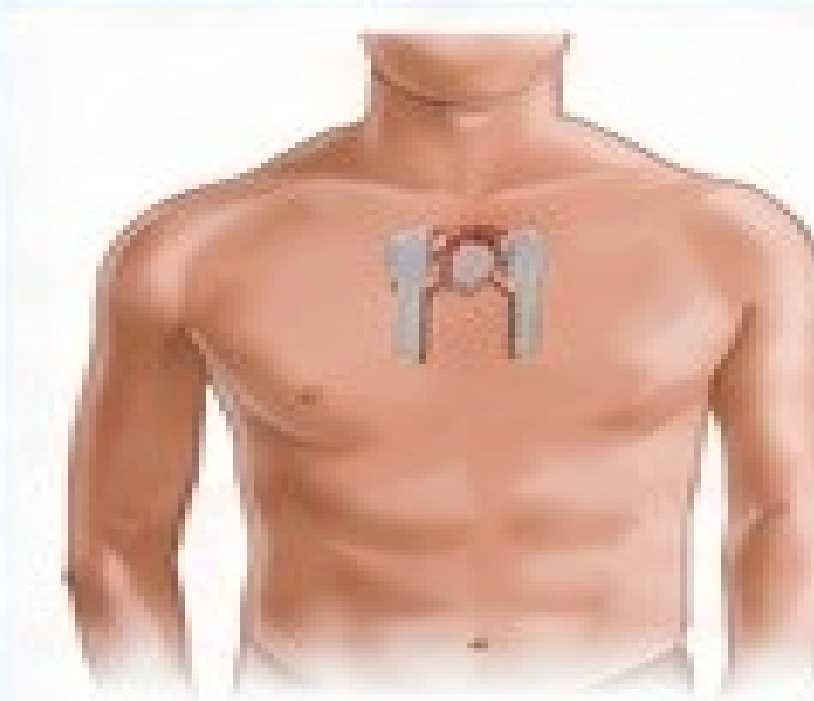
1. PREOPERATIVE CTA



2. POSTOPERATIVE CTA



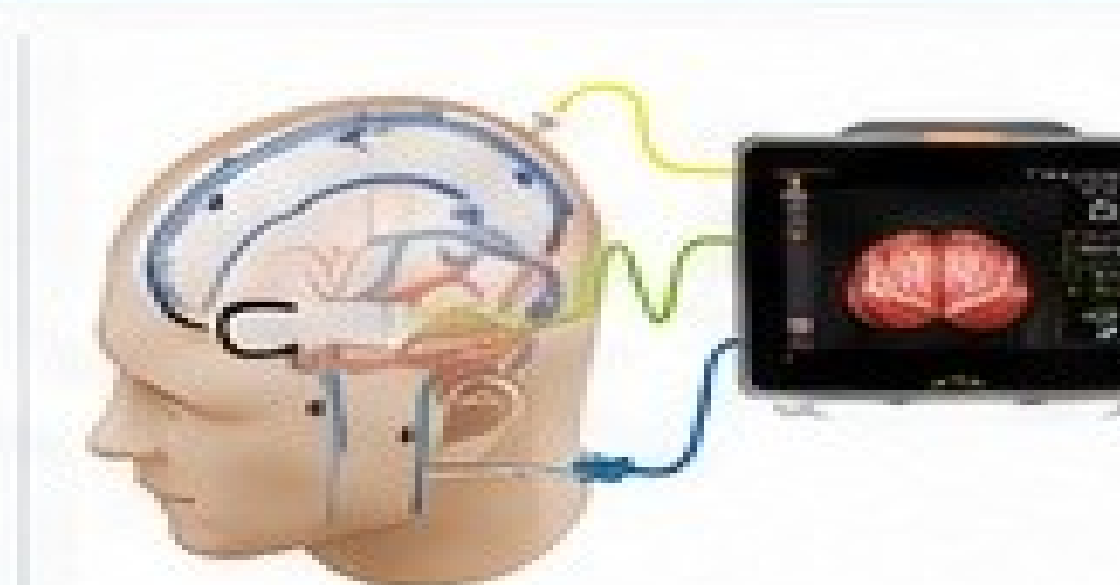
3. KEY STEPS OF THE OPERATION



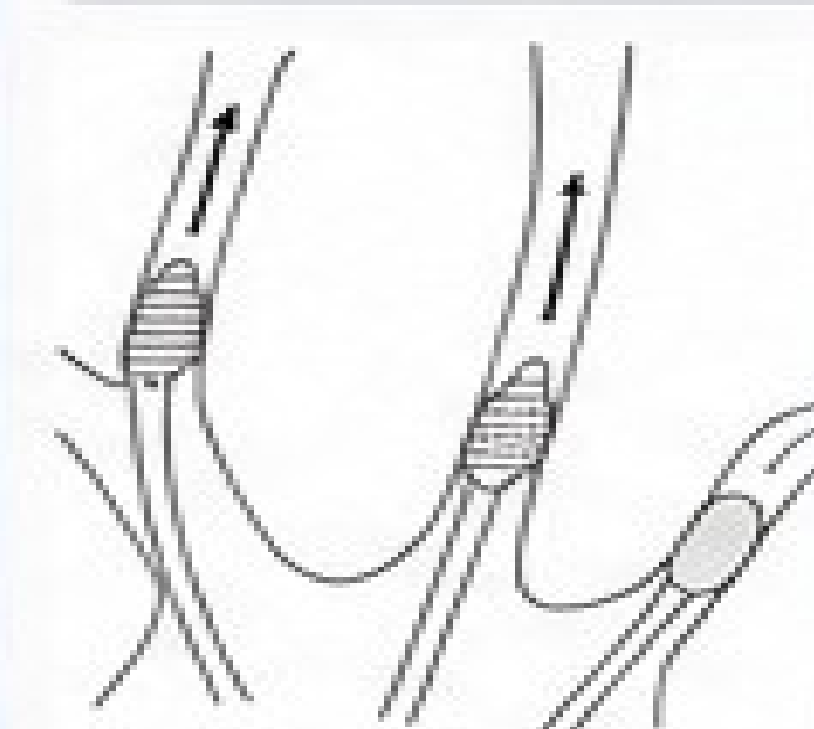
Upper mini-J
sternotomy



Peripheral
cannulation



NIRS monitoring



Bilateral antegrade
cerebral perfusion



Implantation of
endograft into
descending aorta



Completed FET
and aortic
reconstruction

POSTOPERATIVE INCISION AND DRAIN SITES



RESULTS

The FET prosthesis was successfully implanted without technical complications. Adequate exposure of the aortic arch was achieved despite the minimally invasive access. Early postoperative period was uneventful and patient recovered without neurological deficit, major bleeding, or need for reintervention. Postoperative imaging confirmed correct positioning of the endovascular component and satisfactory reconstruction of the ascending aorta and arch.



CONCLUSIONS

The operation achieved an effective single-stage management of advanced aortic pathology with acceptable intraoperative and early postoperative outcomes. This approach may represent a valuable alternative in selected patients when performed by experienced aortic teams and may contribute to the further evolution of minimally invasive approaches for complex aortic surgery.



KEY TAKE-HOME MESSAGE

- Upper mini-J sternotomy provides sufficient exposure for complex aortic arch procedures.
- Frozen Elephant Trunk can be safely performed in ATAAD using minimally invasive access.
- This approach allows single-stage treatment of extensive aortic pathology with good early outcomes.
- Careful patient selection and experienced multidisciplinary team are essential.



SCAN ME!