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Percutaneous Minimal-Invasive Approach for Intra-cardiac Tumors Resection: Single Center Experience and 3 Years Follow-up

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Introduction

Intra-cardiac masses are rare and challenging lesions with an overall incidence ranging of 0.02% - 0.2%. Minimally invasive approaches have been recently introduced for surgical resection of these lesions. Here, we evaluated our early experience using minimally invasive techniques in addressing intra-cardiac lesions.

Method

This is a retrospective descriptive study conducted between April 2018 to December 2020. All patients were diagnosed with cardiac tumors and treated via a right mini-thoracotomy with cardiopulmonary bypass through femoral cannulation at King Faisal Specialist Hospital and Research Center, Jeddah.

Result

Myxoma was the most common pathology representing 46% of cases followed by thrombus (27%), leiomyoma (9%), lipoma (9%) and angiosarcoma (9%). All tumors were resected with negative margins. One patient was converted to open sternotomy. Tumor locations were in the right atrium, left atrium, and left ventricle in 5, 3, and 3 patients, respectively. The median ICU stay was 1.33 days. The median length of hospitalization was 5.7 days. There was no 30 days hospital mortality recorded in this cohort.

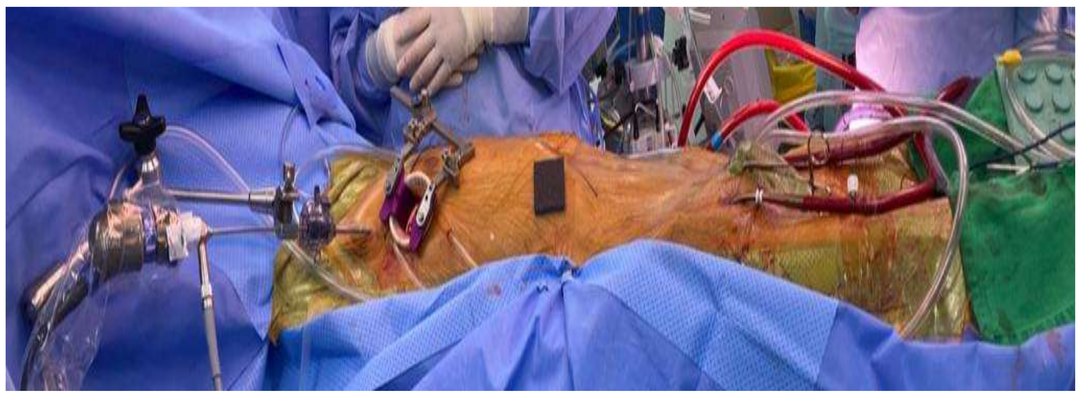
Table

Table 3: Surgical Outcome and Pathologic Findings of Patients with Cardiac Tumors

Study variables	n (%)	Study variable	n (%)
Pathology		- No	11 (100)
- Leiomyoma	1 (9)	**Vascular Access Complications**	
- Lipoma	1 (9)	- No	11 (100)
- Myxoma	5 (46)	- Yes	0 (0)
- Angiosarcoma	1 (9)	**Intubation**	
- Thrombus	3 (27)	- < 12 h	10 (91)
Convert to Sternotomy		- > 12 h	1 (9)
- Yes	1 (9)	**ICU LOS** (days)	
- No	10 (91)	- 1.33 (1 – 3) +/- 0.70	
Needed blood transfusion		**Hospital LOS** (days)	
- Yes	0 (0)	- 5.70 (3 – 8) +/- 1.49	
- No	11 (100)	**30 Days Mortality Rate**	
Wound Infection		- Yes	0 (0)
- Yes	0 (0)	- No	11 (100)

Data are presented as number and percentages; n represents number of patients

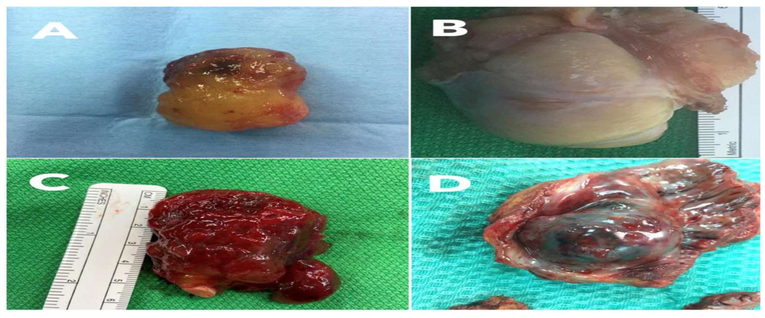
Figure 1



Follow-up

The mean postoperative follow-up was 23+/-7.99 months (ranging from 12 to 36 months). It was done using echocardiogram and clinical evaluation, showing optimum recovery in the majority throughout the follow—up period. There was no reoperation or recurrence of tumor. The preoperative presenting symptoms has been relieved postoperatively and no complications were reported. The only mortality recorded was in the angiosarcoma (9%) patient after 12 months from the operation due to hepatic, spleen, lung, and bone metastasis after receiving palliative chemotherapy.

Figure 2



Conclusion

Percutaneous cannulation and minimally invasive approaches can safely address intra-cardiac tumors with negative margins regardless of their location inside the heart.

References