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Safety and Efficacy of Image-Guided Cryoablation in the Treatment of Unresectable Extra-Abdominal Desmoid Tumours

Authors and Institute:

Dr Payal Sharma, Dr. Gala K B[1], Dr. Kulkarni S[1], Dr. Shetty N[1], Dr, Rafaliya A[1]

[1]Tata Memorial Hospital, Mumbai, Maharashtra, India

Aims/ Objectives:

- To evaluate efficacy and safety of image-guided Cryoablation and to assess the local tumour control, pain control and range of movements in the extremities and complications of the same

Methodology:

- **Inclusion criteria:**
  - Patient with fibromatosis – either recurring or residual after surgery/chemotherapy or hormonal therapies

- **Exclusion criteria:**
  - Lesions in close proximity to the neurovascular bundle

  - A total of 20 patients underwent 27 sessions of cryoablation (4 underwent 2 sessions and 2 underwent 3 sessions of cryoablation)

Results:

Sex	**Male**	9 (45%)
	Female	11 (55%)
Age	**<25 years**	7 (35%)
	25-50 years	10 (50%)
	51-75 years	3 (15%)

Clinical Features	**Patients**
Pain + Swelling	6 (30%)
Pain + Restricted Movements	8 (40%)
Pain + Swelling + Restricted Movements	6 (30%)

Treatment received prior to cryoablation		
Modality	**Surgery**	10 (50%)
	Chemotherapy	3 (15%)
	Surgery + Chemotherapy	7 (35%)

Location of lesion		
Region	**Upper limb**	6 (30%)
	Lower limb	13 (65%)
	Trunk (chest/pelvis)	1 (5%)

The imaging response was evaluated by contrast enhanced MRI (CE-MRI)

RECIST	Patients
Complete response (CR)	0 (0%)
Partial Response (PR)	16 (80%)
Stable Disease (SD)	4(20%)
Progressive Disease (PD)	0 (0%)

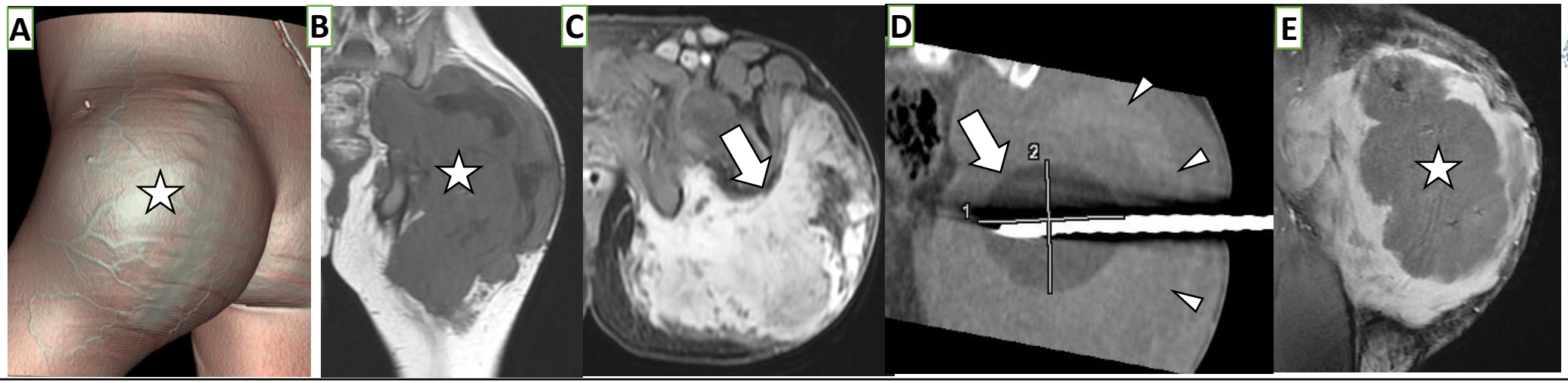
Visual Analogue Scale (VAS)	
Pre procedural Mean	5
Post procedural Mean (1 month)	2.55
Post procedural Mean (3 months)	2.25

Mean MSTS	
Pre procedural Mean	19.9
Post procedural Mean (1 month)	23.15
Post procedural Mean (3 months)	23.7

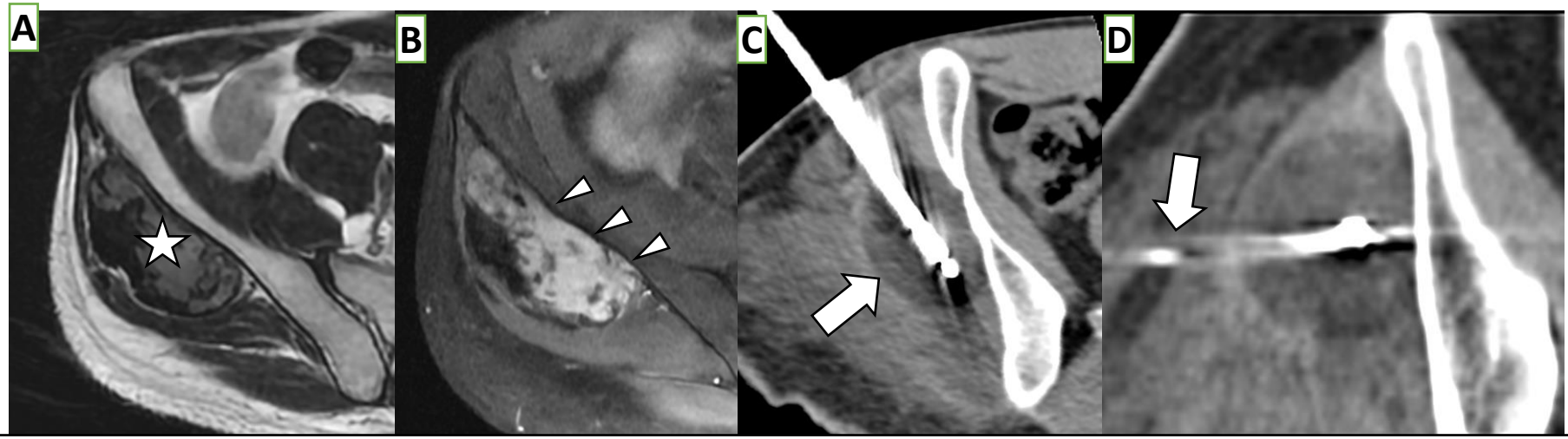
Tumour Volume – Percentage Necrosis	Patients
0-25%	0
26-50%	5 (25%)
51-75%	10 (50%)
>75%	5 (25%)

Lesion volume	cm3
Pre-ablation Mean	141.25
Post ablation Mean	129.2

- Significant improvement in pain score at 3 months – mean **VAS** improved from 5 to 2.55, **$p<0.05$**
- The mean **MSTS** improved from 19.9 to 23.7 over 3 months (**$p<0.05$**)



9 year old child who underwent debulking for fibromatosis with complaints of pain with restriction of movement of left leg. A. Volume rendered image showing gluteal swelling (star) B. Sagittal T1 of left thigh with gluteal fibromatosis (star) C. Axial T1 contrast enhanced image showing enhancement pattern (arrow) D. Sagittal reformatted CT image showing the iceball formation(arrow) within the lesion(arrowheads)during ablation E. Sagittal T1 post contrast image showing significant necrosis within lesion (star) post cryoablation



11 year old child with right gluteal fibromatosis and complaints of pain. A. Axial T2 weighted image showing heterogenously hypointense fibromatosis (star) B. Axial T1 contrast enhanced image showing enhancement of active disease (arrowheads) C. Axial CT during cryoablation showing iceball formation (arrow) D. Sagittal CT reconstruction of the same as in C showing optimum placement as well as the small gauge needle (arrow) placed to hydrodissect and protect overlying skin. Post procedure VAS decreased from 4 to 0

Conclusion:

- Cryoablation is a safe and effective treatment modality in the treatment of fibromatosis
- Cryoablation helps in pain palliation and improves functional outcomes in patients with extra-abdominal desmoids

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