



Cryoablation of Chondroblastoma

Chondroblastoma is a benign bone tumor that contains chondroblastic cells. It typically occurs in the age group of 10-25 years and 75% occur in the epiphysis of the long bones (Fig. 1).

Chondroblastomas were treated in the past with curettage. Over the last 10 years, radiofrequency ablation (RFA) has become a popular method for treating chondroblastomas less than 3.0 cm in size (Fig. 2).

Cryoablation is expected to have similar results [1] and causes less post-procedure pain than RFA and is an alternative to RFA when it comes to benign bone tumors like chondroblastoma (Fig. 3), osteoid osteomas and osteoblastomas.

Cryoablation is a relatively new technique where freezing temperatures are used to kill tumor cells by creating iceballs within the tumors. Liquid nitrogen or argon is used depending on the system. With liquid nitrogen, the temperature at the centre of the ice-ball can reach up to minus 196 degrees Celsius with lethal temperatures of minus 20 to minus 40 degrees in the rest of the iceball (Fig. 4).

Indications

1. Bone tumors – chondroblastomas, osteoid osteomas, osteoblastomas
2. Soft tissue tumors like fibromatosis (Fig. 1) for cure and palliation
3. Lung tumors – primary and metastases
4. Liver tumors – primary and metastases.
5. Renal tumors

Contraindications

1. Large tumor size
2. Abnormal coagulation profile

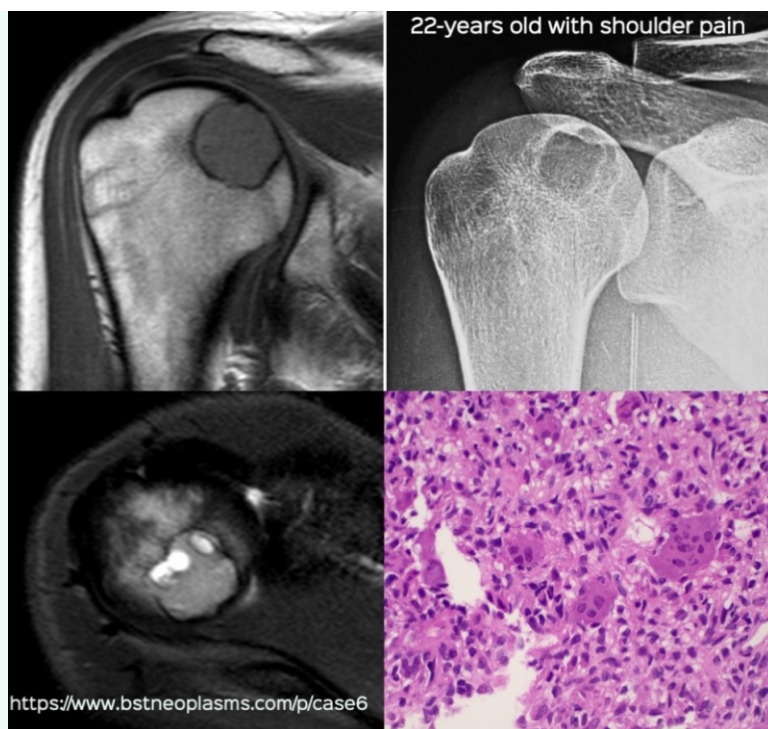
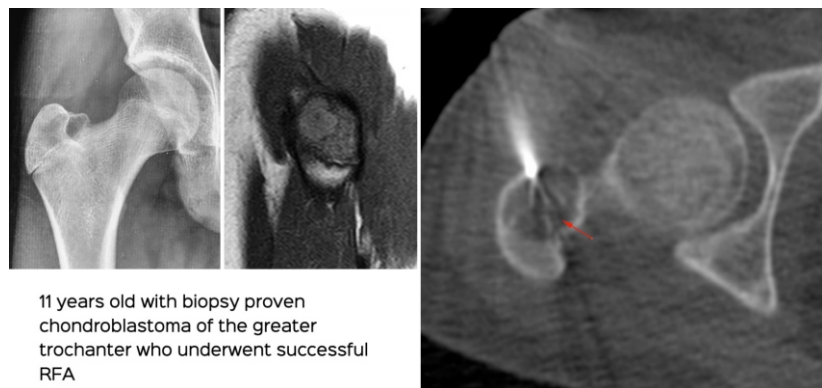


Fig. 1: Humeral chondroblastoma. Typical X-ray, MRI and histopathology findings of a humeral chondroblastoma.



At a glance:

- ◆ Cryoablation is a new ablation technique that uses ice-balls to freeze and kill tumor cells
- ◆ Chondroblastoma < 3.0 cm in size are often treated with RFA.
- ◆ Cryoablation is a good alternative to RFA



11 years old with biopsy proven chondroblastoma of the greater trochanter who underwent successful RFA

Fig. 2: RFA of chondroblastoma. 11-years old with a biopsy proven chondroblastoma underwent successful radiofrequency ablation (RFA).

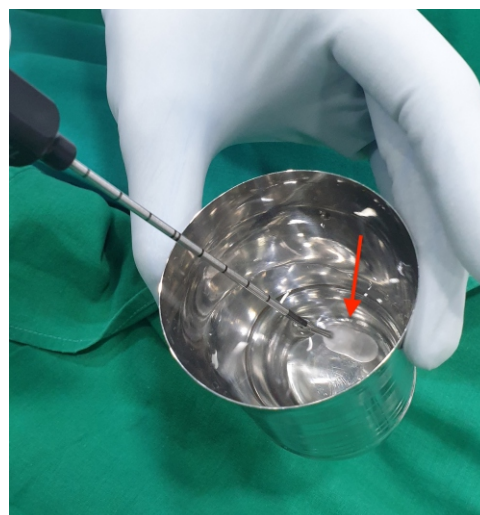


Fig. 4: In-vivo iceball during the procedure.

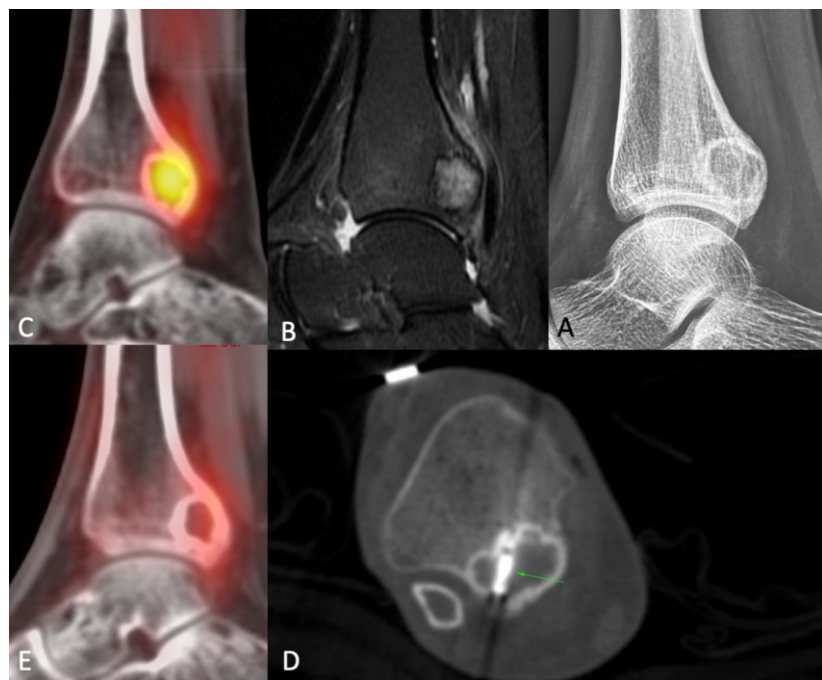


Fig. 3 (A-E). Cryoablation of chondroblastoma. X-ray (A), sagittal T2 MRI (B) and PET (C) show typical features of a distal tibial chondroblastoma in a 20-years old. A 3-3-5 freeze-thaw-freeze cycle was used during the cryoablation (D) with a 13 G probe and intravenous sedation. The post-procedure PET (E) done 10 days later shows complete lack of FDG uptake. The patient was asymptomatic.

Subscribe to INNER SPACES : info@jankharia.com

Online version : <http://picture-this.in/index.php/inner-spaces/>

Main Clinic

383 | Bhaveshwar Vihar | Sardar V. P. Road | Prarthana Samaj | Charni Road | Mumbai 400 004 | T: 022 66173333

Cardiac, Chest & Interventional Twin Beam CT

Nishat Business Centre | Arya Bhavan | 461 | Sardar V. P. Rd | Next to Marwari Vidyalaya | Mumbai 400 004 | T: 022 6848 6666

PET / CT, Organ Optimized 3T MRI

Gr. Floor | Piramal Tower Annexe | G. K. Marg | Lower Parel | Mumbai 400 013 | T: 022 6617 4444

Owner, Printer & Publisher: Dr. Bhavin Jankharia

Published at: Dr. Jankharia's Imaging Centre Bhaveshwar Vihar, 383, S.V.P. Road, Prarthana Samaj, Charni Road, Mumbai 400 004.

Printed at: India Printing House, 1st Floor, 42, G D Ambedkar Marg, Opp Wadala Post office, Wadala, Mumbai 400 031.