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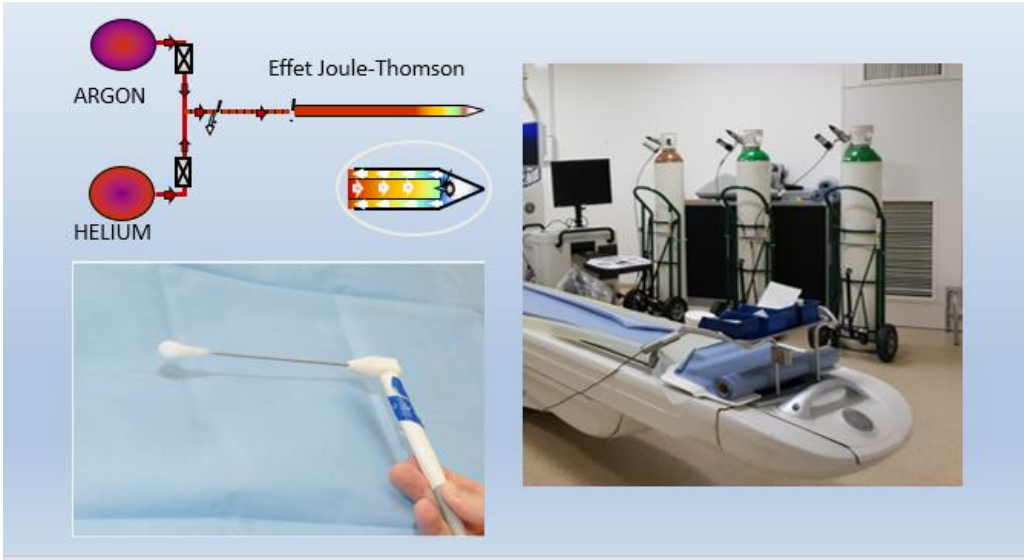
Technical Write-up

Cryoablation System

Concept of Cryotherapy:
Cryotherapy is the latest modality by which localized cancers/ tumors are destroyed by freezing the cells to minus 200° Celsius. In this procedure a Cryo probe/ needle is inserted into the tumor under imaging. This Cryoprobe is connected to the Cryotherapy equipment, which has an inlet for the cylinders of Argon and Helium gases.

Design of the Cryoprobe: The Cryoprobe has a chamber in the distal end of the probe, into which Argon Gas is released at 6000 psi pressure. Due to the Joule Thomson effect the released Argon gas cools the chamber to minus 200° Celsius. The surrounding tissue which has water molecules creates an ice ball, which destroys the tumor. The Argon gas is returned to the atmosphere from the chamber through the Cryotherapy equipment.



A Cryotherapy procedure consists of 10 minutes of freezing and 10 minutes of thawing for 2 cycles. Thawing is done using helium gas using the same principle of Joule Thomson. Both these gases do not come in direct contact with human body.