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OBJECTIVE:

Prostate cancer accounts for about 5% of new cancer diagnosed in Oman. This is in absence of the prostate cancer screening program. LDR prostate brachytherapy alone or in combination with External Beam Radiotherapy (EBRT) is a standard curative treatment option for localized prostate cancer patients. It is also used for salvage treatment option for local failure after EBRT. Our institute successfully launched the first LDR brachytherapy program in the Middle East and Region.

MATERIALS AND METHODS:

Establishing a new service may be challenging. The following requirements and steps to acquire them was identified to initiate a prostate brachytherapy program:

- 1) Equipments: The operating room and Anaesthesia equipment were already in place. Other requirements were acquired through the Biomedical Engineering department including VariSeed software, BK ultrasound system with trans-rectal probe, CIVCO stepper and table mount, penile clamp and other disposable items. Due to the process: requesting approval from the Executive Committee, a tender to be floated and have to purchase through a third party (not directly from companies) which was costly, complicated and was time-consuming. However, this process was completed by teamwork.
- 2) Personnel: Qualified and experienced staffs were already hired. Further in-house training was provided by internal and external expertise.

3) Regulatory requirements: There is a regulatory requirement to import radioactive material into country, which was fulfilled by obtaining the required license from Government officials.

4) Quality assurance (QA) is important in radiotherapy treatment delivery. All equipment's QA, radioactive seeds calibrations and brachytherapy plans were performed by Medical Physics.

5) Timeline: About 15 months consumed from the concept to start the program due to the above-mentioned challenges.

6) Seed delivery: Seed was ordered and supplied from the USA through protected item shipment and cleared by customs in Oman. On-time seed delivery was challenging in the first few cases due to this new process. After collaborating with stakeholders, transport and shipment is now delivered in a timely manner with minimal complications.

RESULT:

Program function was successful after challenges were met. Five patients were treated so far including a salvage treatment case. Regulatory services are not well established in developing countries, necessitating extra documentation, establishing new policies and rules, working with government agencies to get approvals. This was a new concept of treatment to many stakeholders. Therefore, dummy seeds were ordered to remove any potential obstacle before ordering actual radioactive seeds for treatment. Also, dry runs were conducted to ensure all parties were aware entire process of treatment.

Challenges related to logistics and custom clearances of radioactive seeds were resolved by communication with concerned airline team and organizing shipment to be delivered during working hours.

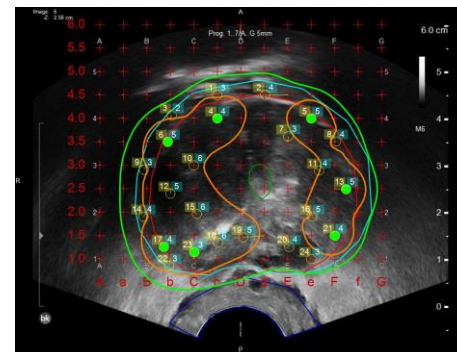


Figure .1: US image with LDR dose coverage for the first patient performed at SQCCRC. Red =CTV, Cyan =PTV 3mm around except posterior, Dark Green = urethra, Blue = Rectum. Light Green = 100% isodose to 145 Gy and Orange is 150 % of prescribed dose (145 Gy).

CONCLUSION:

The LDR brachytherapy treatment was successfully launched in Oman. This abstract provides a glimpse of some of the challenges that were faced and how it was resolved in a country where this program was not already established.

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