THULIUM LASER TREATMENT OF EARLY STAGE PENILE CANCER: INITIAL RESULTS AND FUNCTIONAL OUTCOMES


Introduction and Objectives
Traditional surgical treatment of penile carcinoma was amputation of the glans, resulting in organ dysfunction and disfigurement, with a strong impact on patient’s quality of life. Several conservative treatment modalities have been introduced with the goal of achieving conservative treatment. We present the initial experience with thulium laser excision of early stage penile lesions.

Materials and Methods
A total of 26 patients with early stage penile lesions undergoing thulium laser treatment in a tertiary referral center between 2013 and 2016 were identified. Patients underwent ablation with a RevoLix 200 Watt Continuous Wave Laser. Under local anesthesia, the procedure was carried out with a pen-like laser-handpiece, using a 360 µm laser fiber and 15-20 Watts of power. Perioperative characteristics, pathological and functional outcomes were assessed.

Results
Median (IQR) age at surgery was 61 (54-72) years. Median (inter quartile range) size of the lesions was 15 (10-20) mm. At final pathology 2 patients reported lichen sclerosus, 1 patient presented balanitis and 1 patient was affected by giant condylomata acuminata of Buschke and Lowenstein. Among the remaining 23 patients, 11 (47.8%) and 12 (52.2%) at final pathology presented in-situ and invasive squamous cell carcinoma (SCC), respectively. Final pathological stage was pTis, pT1, pT2 and pT3 in 11 (47.8%), 7 (30.4%), 3 (13.0%) and 2 (8.7%) patients, respectively. Moreover, 4 (22.2%) patients had a recurrence of which 3 (75%) and 1 (25%) patients developed an invasive or in situ recurrence. The site of recurrence was the treated area in all patients, no inguinal recurrence occurred. Three patients after laser ablation had a T2 or T3 disease and where submitted to amputation and sentinel lymph node biopsy or inguinal lymph node dissection according to clinical parameters. Finally, the totality of the recurring patients underwent repetition of Tm:YAG laser treatment.

Overall, 6 (46.1%), 2 (15.4%), 2 (15.4%) and 3 (23.1%) patients had erections after less than a week, after around two weeks, after less than a month and after a month, respectively. Post operative sexual activity was achieved after less than a month in 6 (50.0%) patients, after less than two months in 2 (16.7%) patients, after more than two months in 1 (8.3%) patient, while 3 (25.0%) patients did not report sexual activity after surgery. After treatment 5 (33.3%) patients reported a conserved penile sensitivity, while 7 (46.7%) and 3 (20.0%) patients experienced a better or worse sensitivity, respectively.

Conclusions
Early-stage penile carcinomas can be effectively treated with an organ preservation strategy. Thulium laser treatment with a pen-like laser-handpiece is more ergonomic than the traditional CO₂ laser treatment. Thulium laser conservative treatment is easy, safe and offers good functional outcome, with a minor impact on patient’s quality of life.