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Is there a role for the development of a supra-regional network for the management of penile cancer in the Republic of Ireland?

N.F. Davis [a], M. Fitzgerald [a], J.P. Burke [a], K.J. Breen [a], S. Elamin [a], C.M. Brady [a], D.G. Power [b], P.K. Hegarty [a,c], P. Sweeney [a,*]

[a] Department of Urology, Mercy University Hospital, Co. Cork, Ireland
[b] Department of Medical Oncology, Mercy University Hospital, Co. Cork, Ireland
[c] Mater Misericordiae Univeristy Hospital and Mater Private Hospital, Ireland

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ABSTRACT

Introduction: There is an average of 25 cases of penile cancer in the Republic of Ireland each year. Due to the low volume of cases, the National Institute for Clinical Excellence recommends that treatment is centralised to allow the best standardised treatment for primary tumours and nodal disease.

Objectives: To determine whether outcomes for patients with penile cancer differed significantly between secondary and tertiary referral centres in the Republic of Ireland.

Methods: Between 2001 and 2014, 36 patients were treated in the Mercy University Hospital (MUH) with penile cancer. Twenty patients were treated primarily in MUH and 16 patients underwent initial management in a secondary referral centre (SRC) with subsequent referral to the MUH. A retrospective matched case-control study was performed on this patient cohort.

Results: There were no significant differences in length of follow-up or risk factors for the development of penile cancer between both groups ($p = 0.6$ and $p = 0.5$ respectively) Ultimately, the incidence of high risk disease, nodal metasases, high grade disease and pelvic lymph node dissection were significantly greater in patients that were initially managed in a SRC ($p = 0.02$, $p = 0.03$, $p = 0.004$ and $p = 0.028$ respectively). Patients undergoing initial treatment in a SRC had a non-significantly reduced rate of cancer specific survival (88 Vs 66%, MUH Vs SRCs, $p = 0.495$) and recurrence free survival (85 Vs 46%, MUH Vs SRCs, $p = 0.24$).

Conclusion: Our findings suggest that managing penile cancer in special interest centres may improve oncological outcome.

* *Corresponding author*. Tel.: +353 21 427 1971.
E-mail addresses: nialldavis@rcsi.ie (N.F. Davis), psweeney@muh.ie (P. Sweeney).
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Introduction

Squamous cell cancer (SCC) of the penis occurs infrequently in developed countries and accounts for <0.5% of all male malignancies in the USA.[1,2] Due to its low incidence the National Institute for Clinical Excellence (NICE) recommends that all men with penile cancer in Great Britain and Ireland should be managed in supra-regional centres that cover a population of ≥4 million.[3] Furthermore, a minimum of 25 new cases per year should be treated and this number represents the average number of newly diagnosed cases in Ireland per year (2000–2010).[3,4] Based on this epidemiological data it would appear that one supra-regional centre in Ireland should facilitate standardised investigations, treatment, counselling and long-term follow-up for patients with penile cancer (PCa).[5]

Despite these recommended guidelines there are no established supra-regional centres for PCa in Ireland. Our institution has a specialised multidisciplinary team for managing PCa and has described the only published series of PCa according to EAU guidelines to date.[4] In the absence of a standardised supra-regional centre it is likely that patients with newly diagnosed PCa may be managed in secondary and tertiary referral centres according to unclear protocols that may not be evidence based.[3] Therefore, the aim of the present study was to determine whether long-term outcomes for patients with newly diagnosed PCa differed significantly between secondary and tertiary referral centres in Ireland.

Materials and methods

Overview of study design

Between 2001 and 2014, 36 patients were treated in our unit with PCa. Twenty patients were treated in The Mercy University Hospital (MUH) and 16 patients underwent initial management in a secondary referral centre (SRC) with subsequent referral to the MUH. A retrospective case-control study was performed on this patient cohort. Primary outcome variables were cancer specific survival (CSS) and recurrence free survival (RFS). Secondary outcome variables were duration of presenting symptoms prior to referral to MUH and risk stratification (based on tumour stage and tumour grade).

Patient demographics

Data pertaining to risk factors for PCa, histopathology and length of follow-up were recorded. After treating the primary tumour data relating to low-, intermediate- or high risk categories was documented as per the EAU guidelines. Inguinal lymph node dissection was performed in patients categorised as intermediate- and high risk and in patients with palpable inguinal lymph nodes on clinical examination. Typically, inguinal lymphadenectomy was performed on one side 6–8 weeks after treating the primary lesion with an interval of 6–8 weeks prior to performing an inguinal lymphadenectomy on the contralateral side. Pelvic lymphadenectomy was performed in cases with 2 positive inguinal lymph nodes, in the presence of extra-nodal extension, involvement of the femoral/Cloquet's node and/or radiological suspicion of pelvic lymph node metastasis.

Postoperative follow-up

All patients were followed up with a physical examination and CT as per the EAU guidelines.[1,6] No patients were lost to follow-up and survival based on tumour grade, stage and nodal disease was determined from the date of diagnosis to the date of death. The number of patients that received a regimen of adjuvant chemotherapy was also recorded and survival with metastatic disease was measured as the date of diagnosis with metastasis to death.

Statistical analysis

Unless otherwise stated, data are represented as mean ± standard deviation (SD) and *N* represents the number of patients included in the analysis. Differences in the distribution of clinical data were evaluated using a 2-sided Fisher exact test for categorical variables and the analysis of variance (ANOVA) for continuous variables. Survival and recurrence rates were compared using Kaplan–Meier estimates with discrepancy assessed using a log-rank test. $P < 0.05$ was considered statistically significant. All calculations were done using SPSS version 12.0 (SPSS Inc, Chicago, IL).

Results

Patient demographics

There were no significant differences in risk factors for the development of PCa in both groups as demonstrated in Table 1. The mean age at diagnosis was 65 ± 2.5 years in the group that were directly managed at MUH compared to 60 ± 2.7 years in the group that were initially managed in a SRC ($p = 0.182$). All patients presented with an ulcerating lesion on the glans penis and the duration of presenting symptoms prior to review in MUH was 1.9 ± 0.2 compared to 7.6 ± 1.7 months in patients that were initially managed in a SRC with subsequent referral to MUH ($p < 0.001$).

Table 1 – Demographics of patients with PCa that were managed initially in MUH (Direct) compared to patients that were initially managed in a SRC (Indirect).

	Direct (*n*: 20)	Indirect (*n*: 16)	*P*-value
Age (yr)	65.5 ± 2.5	60 ± 2.7	0.182
Follow-up (Months)	36.5 ± 8.2	30.6 ± 6.3	0.591
Smoking	11	11	0.501
Circumcised	3	5	0.422
Phimosis	8	7	0.544
GP to MUH (months)	1.9 ± 0.2	7.6 ± 1.7	<0.001