Penile cancer in the UK: clinical presentation and outcome in 1998/99

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OBJECTIVE

To use the British Association of Urological Surgeons (BAUS) Cancer Registry data to audit a cohort of patients with penile cancer, and thus evaluate current management practices in the UK.

PATIENTS AND METHODS

In all, 243 patients were registered over an 18-month period shortly before the publication of the UK National Institute of Clinical Excellence cancer guidelines. Clinical data, including preceding skin disorders, the clinical presentation, management, treatment-related complications and the outcome in terms of local, nodal or distant disease recurrence, survival and cause of death, were sought from the originating clinician.

RESULTS

Data were obtained on 193 patients (79% of the initial population). One consultant reported five patients and the most from one centre was eight. A painless lump or ulcer was the commonest presentation; 45 patients had pre-existing skin disorders. The median age was 65.5 years and 67 patients were aged <60 years. Squamous cell carcinoma accounted for 94% of the pathology. There were wide variations in treatment for patients of similar disease stage. Twenty-six patients had palpable regional nodes and 44 had a lymph node dissection; complications were reported in 43, including 18 of 44 having node dissection. The median follow-up was 27.7 months from the date of diagnosis. Death from penile cancer was recorded in one of 22 patients with stage 0 disease and seven of nine with stage IV disease. Positive lymph nodes had a detrimental effect on survival.

CONCLUSION

Experience in the management of penile cancer is shared by many urological surgeons in the UK. These data provide a 'baseline' against which to measure the outcome of specialist multidisciplinary team activity.

KEYWORDS

penile cancer, management, outcome, complications, specialisation

INTRODUCTION

Penile cancer is a rare disease, with ≈360 new cases recorded in the UK each year. UK urologists see less than one new patient with penile cancer per year. The relative rarity creates problems in terms of enabling individual urological surgeons to gain wide experience in managing such patients.
The recent introduction of techniques for preserving normal tissue has challenged the conventional management of local disease by wide-margin resection, using partial or total penectomy. The management of local lymph nodes, when palpable or impalpable, remains controversial, and the results of node dissection are associated with significant complications. The National Institute for Clinical Excellence (NICE) Guidance on Cancer Services [1] recommended specialist penile cancer multidisciplinary teams (MDTs) serving a population base of ≥4 million.
It is recommended that the MDTs have access to expertise in plastic surgery. We present an audit of a large cohort of UK patients managed in the period just before the introduction of the NICE cancer guidelines.

PATIENTS AND METHODS

Newly presenting patients registered during 1998 (6-month pilot data collection) and 1999 were used as the starting population. Consultants who had registered patients were contacted and presented with a proforma containing the data sent with the original registration (Appendix). They were asked to complete any missing data items and to supply additional information about preceding skin disorders, the clinical presentation, management, treatment-related complications and the outcome in terms of local, nodal or distant disease recurrence, survival and cause of death. Survival was analysed using life-table methods.

RESULTS

In all, 243 patients were registered with a date of diagnosis between 9 October 1997 and 24 December 1999. Proformas with additional data were returned for 193 of these patients; thus the response rate to our request for information was 79%. In all, 119 consultants reported patients from 90 centres during the survey period; one consultant reported five patients, four reported four, 13 reported three, 32 reported two and 69 reported one, and the most reported from one centre was eight, with 38 centres reporting only one patient.

The presenting clinical features are shown in Table 1; the commonest presentation was with a painless lump or ulcer. In nine of 193 proformas the clinical presentation was stated as 'not known' or left blank. Forty-five patients were reported as having pre-existing skin conditions, included balanitis xerotica obliterans in 14, phimosis in three, chronic inflammation in five, two each with Bowen's disease, warty lesions or previous excision of 'squamous lesions', and cases of erythroplasia, 'keratotic lesion' and 'dysplasia'. Twenty-three patients had been circumcised before clinical presentation; the age at circumcision was not recorded. The median

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TABLE 1 The clinical presentation and histology

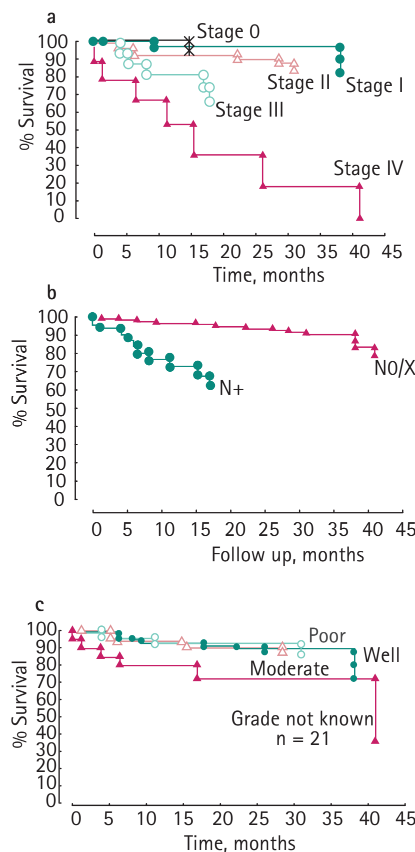
Presenting feature/histology	N patients
Painless lump	62
Painless ulcer	32
'Rash'	15
Bleeding	13
Phimosis	12
Balanitis	11
Acute urinary retention	6
Lump and bleeding	3
Phimosis and discharge	3
BOO	2
Discharge	2
Haematuria	2
Lump and discharge	2
Painful ulcer	2
Penile pain	2
Warts	2
Abscess	1
Gangrene	1
Groin swelling	1
Haematuria and lump	1
Lump	1
Meatal stenosis	1
Oedema	1
Painful lump	1
Paraphimosis	1
Phimosis and lump	1
Pigmentation	1
UTI	1
White spot	1
Not known	9
Histology	
SCC	182
Basal cell carcinoma	2
Leiomyosarcoma	2
Malignant melanoma	2
Bowen's disease	1
Lentigo maligna	1
SCC and metastatic GI adenocarcinoma	1

GI, gastrointestinal.

(range) age was 65.5 (21–92) years and 67 patients were aged <60 years.

GPs referred 122 patients, other clinicians 43 and another urologist 23; the source of referral was unknown for five. Ninety patients were referred with a suspicion of cancer, 44 as urgent or an emergency and 24 as routine; in 35 the priority of referral was not stated. The time from the date of referral to the date of the first consultation was available for 148 patients; the median (range) for this interval was 13 (0–190) days.

FIG. 1. Cancer specific survival by (a) stage, (b) nodal status and (c) histological differentiation.



Histological confirmation of the diagnosis was available in 191 of 193 patients. The histology was squamous cell carcinoma (SCC) in 182 patients (94.3%); the other histological diagnoses are shown in Table 1. The lesion was well differentiated in 80 men, moderate in 61, poor in 31 and unknown in 21. Histological differentiation had no clear correlation with survival (Fig. 1c).

Tumours were staged according to the TNM system (Fifth edition, 1997). Where pathological staging data were available, these were used in preference to clinical staging data. The distribution of stage is shown in Table 2; the data were inadequate for staging in seven patients.

Table 2 also shows the 'definitive' treatment used and analysed by stage of disease. Some patients had many treatments, e.g. progressing from local excision to partial penectomy and later radical penectomy. The treatment shown in Table 2 is the first 'definitive' treatment used.

Twenty-six patients had palpable lymph nodes and 44 had a lymph node dissection; the proportion of patients in each stage and having a lymph node dissection is also shown in Table 2. Details of the precise indication for lymph node dissection in each patient were not available.

Eighty-nine patients were referred to, or had shared-care with, an oncologist, but only 12 were treated with systemic chemotherapy. Complications of treatment were reported in 43 patients; meatal stenosis was the most common, in two of 17 treated by radiotherapy alone, in six of 14 treated by local excision and radiotherapy, in 10 of 79 having partial penectomy and three of 20 having total penectomy. Of the 44 patients having lymph node dissections, 18 had complications. Two men died from pulmonary emboli after surgery, seven had wound infections and/or breakdown, and eight had problems with lymphoedema. One patient had a femoral artery erosion, leading to above-knee amputation.

The median (mean, range) follow-up was 27.7 (23.4, 0–50) months; eight patients had no follow-up data available after the date of diagnosis, and most such patients had been referred to another centre. The follow-up status as related to stage is shown in Table 2. Cancer-specific survival was analysed by stage, nodal status and grade; the results are shown in Fig. 1.

DISCUSSION

This review of a large cohort of contemporary patients with penile cancer was made possible by the voluntary, collaborative effort of urological surgeons and members of their teams. The 'BAUS Cancer Registry' was founded in 1998 and has had increasing new cancer registrations each year. Comparison of the present data with the latest available 'National' cancer registrations involves collation of data from the Office of National Statistics, the Welsh Cancer Intelligence & Surveillance Unit, the Scottish Cancer Registry and the Northern Ireland Cancer Registry. We estimate that for our latest analyses we have data at presentation for 67.3% of the incident cases in the UK. The data reported to the BAUS registry do not

TABLE 2 Definitive treatment, follow-up and outcome according to disease stage

Treatment or outcome	Stage, n 0	I	II	III	IV	None
Biopsy only	–	2				
Local excision	13	23	2	1	3	2
Local excision + radiotherapy	1	11	2	–	–	–
Local excision + chemotherapy	1	–	–	–	–	–
Radiotherapy	1	4	9	2	1	–
Glansectomy	–	3	–	–	–	–
Partial penectomy	6	30	32	8	1	2
Total penectomy	–	2	8	7	2	1
None/refused	–	–	3	–	1	1
Not known	–	2	3	1	1	1
Total n	22	77	59	19	9	7
Lymph node dissection, n (%)	1 (5)	10 (13)	21 (36)	8 (42)	3	1
Median (range) follow-up, days	804 (23–1168)	905 (0–1416)	886 (0–1501)	515 (26–1271)	334 (0–1229)	641 (0–1071)
No evidence of disease	15	56	35	8	0	4
Alive with:						
local recurrence	2	1	0	–	–	1
nodal recurrence	–	–	3	1	–	–
metastases	–	–	–	1	–	–
Deaths:						
total	4	14	18	9	9	3
from penile cancer	1	4	7	5	7	0

include diagnoses made at the time of death certification or at postmortem. Therefore we are reasonably confident that the data presented here are representative of UK patients with the clinical problem of penile cancer.

Other large series of patients with penile cancer have been reported from Brazil and France [2,3]. Ornellas *et al.* [3] reported on 414 patients referred to the Brazilian National Cancer Institute between 1960 and 1987. The median (range) age of their patients was 56 (23–91) years; the present patients had a similar range of 21–92 years but with a median of 65.5, and 67 men were aged <60. These combined data should help to dispel the myth of penile cancer as a disease of extreme age in a population unable to travel for specialist care.

Most patients were referred by their GP with a 'suspicion of cancer' or as 'urgent'. The median time between referral and first consultation was 13 days and 58% were seen within 14 days.

Circumcision in infancy is considered to protect against the development of SCC of the penis [4]; only 23 of the present patients had been previously circumcised, at an unknown age.

Tumour differentiation (or grade) was reported as an independent prognostic factor [5,6]. We did not confirm a clear relationship between grade and cancer-specific survival; Fig. 1c shows similar survival curves for patients with well, moderate and poorly differentiated tumours. However, the present series contained a group of 21 patients in whom the grade was unknown; it is possible that this group confounded the analysis, which we consider inconclusive for grade as a useful prognostic factor. The TNM staging appeared to correlate with cancer-specific survival, as shown in Fig. 1a. An important determinant of survival in penile cancer appears to be the presence or absence of nodal disease; Fig. 1b shows cancer-specific survival for patients categorised as N0 or Nx and compares this with patients categorised as node-positive. Forty-four of the patients had lymphadenectomy and the data confirm the experience of others that such surgery is associated with significant morbidity [7]. We have no detailed information on the indications for lymphadenectomy and are therefore unable to assess the impact of node dissection on survival. Others have shown that lymphadenectomy at the time of treating the primary lesion produces better results than if it is delayed [2].

The treatment of the primary lesion is also controversial; Table 2 lists the 'definitive' treatment compared with the disease stage. This analysis shows considerable disparity in the management of patients with disease of similar stage. The data can be interpreted as 'over-treatment' of low-stage disease, where more conservative surgery such as 'glansectomy' [8,9] may have been possible. At the other end of the disease spectrum, local excision for stage III and IV disease may represent 'under-treatment'.

It is clear from the present data that experience in managing penile cancer was thinly spread at the time of the study. One consultant reported five patients in the 18-month period and the most from one centre was eight, with 69 consultants reporting one patient. The development of cancer networks with appropriate guidelines should have the effect of concentrating this experience into fewer hands. This study should provide a 'baseline' against which the outcome of such activity can be measured.

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CONFLICT OF INTEREST

None declared.

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Abbreviations: **NICE**, National Institute of Clinical Excellence; **SCC**, squamous cell carcinoma.

APPENDIX 1

Proforma sent to Consultants
Dear < < insert consultant's name > >

During 1998 and 1999 you registered patient(s) with penile cancer with the BAUS Section of Oncology Registry of Newly Presenting Urological Cancers.

As agreed at a previous annual meeting of the Section, we are now writing to request information about your patient(s) to complete the original dataset and to seek additional information about the presenting features and outcome of your patient(s).

The aim is to produce a report documenting the clinical features and outcome of a contemporary cohort of patients with penile cancer. We hope that this report will influence clinical management in the future. Your name will be acknowledged as a contributor, in any report that stems from this survey.

We realise that this will involve some extra work but are very keen that you support us in this venture. We would also point out that the number of patients for any one urological surgeon is very small.

Please complete the enclosed proforma, of which there is one for each patient and return it to Sarah Fowler by the end of May 2002.

Many thanks in anticipation of your contribution.

Yours sincerely

Alastair W.S. Ritchie Sarah Fowler

BAUS Section of Oncology – Penile Cancer Follow up Study
> > print out of data already supplied highlighting any missing data items
»For 1998 patients add additional data items included in 2002 dataset except date of definitive treatment
»For 1999 patients add additional data items included in 2002 dataset except date of definitive treatment

Additional Information for all patients
(1) Describe the presenting symptoms/ features . . . .
(2) Was there a pre-existing skin disorder? Yes/No

If Yes please specify . . . .
(3) Was there a history of circumcision before presentation? Yes/No
(4) Describe the definitive treatment for the penile tumour . . . .

If surgery was involved, please indicate if the procedure involved local excision, partial penectomy or radical penectomy

If radiotherapy was involved, please indicate the technique used (external beam or brachytherapy) or give details(name and address) of the clinician in charge of treatment

Date of definitive treatment
–/–/—
(5) Did the patient have any lymph node dissection(s)? Yes/No

Date(s) of lymph node dissection(s)
–/–/—

If the patient had any lymph node dissection(s) please indicate if these were for palpable or impalpable nodes.

(6) Was the patient referred to an oncologist? Yes/No
(7) Did the patient receive any systemic chemotherapy? Yes/No
(8) Outcome

The date the patient was last seen – –/– –/– –

Please answer this question for all patients
(9) Current Status

Alive with no evidence of penile cancer?

Alive with local recurrence of penile c ancer?

Date of diagnosis of local recurrence
–/–/—

Alive with lymph node involvement by penile cancer?

Date of diagnosis of lymph node involvement
–/–/—

Alive with metastatic disease?

Date of diagnosis of metastatic disease
–/–/—

Dead?

Date of death –/–/—

Cause of death

Died of penile cancer

Died of non-cancer causes

(10) Complications of treatment

Describe any treatment related complications

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