A STUDY ON CASES OF CARCINOMA PENIS IN GOVERNMENT RAJAJI HOSPITAL

Dissertation Submitted for

Branch I M.S. (General Surgery)

FEBRUARY-2006

THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY

CHENNAI

DEPARTMENT OF GENERAL SURGERY

MADURAI MEDICAL COLLEGE

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CERTIFICATE

This is to certify that the dissertation entitled "A STUDY ON CASES OF CARCINOMA PENIS IN GOVERNMENT RAJAJI HOSPITAL" is a bonafide record of work done by **Dr.R.ABHIMAN GAUTAM** in the Department of surgery Govt. Rajaji Hospital, Madurai Medical College, Madurai.

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ACKNOWLEDGEMENT

I wish to express my sincere gratitude to my chief and Professor and Head of the Department of General Surgery, Prof Dr M Kalyanasundaram, MS., FICS for his able guidance and valuable advice in the completion of this study.

I am extremely thankful to Dr. Vasantha, MD., Dean, Madurai Medical College, for allowing me to utilize the hospital materials for my study.

I wish to express my sincere thanks to all my assistant professors, Dr.R.Vijayan, MS FICS., Dr.P.S.Chandrasekaran, MS DMRD., Dr. D.Maruthupandian MS FICS FAIS., Dr. N. Vjayan MS., Dr. S. Lakshmi MS DGO, who rendered their valuable guidance for the successful completion of this study.

I express my heartfelt gratitude to all the patients who have cooperated and rendered themselves for this study.

CONTENTS

INTRODUCTION

The study carried out is about 28 malignant lesions of penis treated in Government Rajaji Hospital, Madurai during 2003-2005.

The penis is the male copulatory organ and the common outlet for urine and semen. Along with the regulatory effects of testosterone, penis provides the symbol of manliness. It also has got great impact on the mental, psychological & social well being of an individual.

Penis is affected by inflammatory, traumatic, infective and neoplastic (both benign & malignant) lesions. Most of the lesions are preventable and most of them affect the illiterate & people belonging to the low socio economic group. Any penile lesion has great impact on mental, social and psychological well being of the individual.

AIMS OF STUDY

1. To study about various predisposing & etiological factors for the development of carcinoma penis.
2. To compare the advantages & disadvantages of various modalities of management.
3. To formulate guidelines for the management of carcinoma of penis.

REVIEW OF LITERATURE

Anatomy

Penis consists of a fixed portion called Root, a mobile part called Body, which is anterior and glans penis. It is composed of three cylindrical bodies of erectile cavernous tissue - two corpora cavernosa and a corpus spongiosum. Each has an outer fibrous covering or capsule, the tunica albugenia. Superficial to this capsule is the deep fascia of penis (Buck's fascia), which is the continuation of the deep perineal fascia.

Root of penis consists of crura, bulb, ischiocavernosus and bulbospongiosus muscles. It is located in the superficial perineal pouch. Each crus is attached to inferior part of the internal surface of corresponding ischial ramus. The posterior part of the bulb is penetrated superiorly by the intermediate part of urethra.

Body of penis is the free part that is pendulous in the flaccid state. Distally the corpus spongiosum expands to form the conical glans penis. An obliquely grooved constriction called the neck of the glans separates it from the body of penis. Slit like opening of the spongy urethra, the external urethral orifice (meatus) is near the tip of the glans. At the neck of glans, the skin and fascia of penis are prolonged as a double layer of skin, the prepuce (foreskin), covering the glans to a variable extent.

The suspensory ligament of penis is a deep fascial condensation from the anterior surface of the pubic symphysis. The fundiform ligament is a band of elastic fibres of subcutaneous tissue extending from the linea alba superior to the pubic symphysis.

Penile Musculature

The bulbospongiosus muscles lie in the median plane of perineum anterior to the anus. The two symmetrical parts arise from a median tendinous raphe inferior to the bulb of penis & perineal body. It forms a sphincter that compresses the bulb of penis and corpus spongiosum thereby aiding in emptying the spongy urethra of residual urine and semen. The anterior fibres also assist erection by increasing pressure on the erectile tissue in the root of penis.

The ischiocavernosus muscles surround the crura in the root of penis. Each arises from the internal surface of ischial tuberosity and ischial ramus and inserted into ventral surface of crus and perineal membrane. They force blood from the crural cavernous spaces into the distal parts of corpora cavernosa, increasing the turgidity of penis.

Blood Supply

Arterial supply of penis

Branches of internal pudendal artery

- dorsal arteries – supplying fibrous tissue around corpora and penile skin.
- Deep arteries - supplying the erectile tissue.
- Artery of bulb - supplying corpus spongiosum and bulbourethral glands.

Branches of external pudendal artery

- Superficial and deep branches supply penile skin anastamosing with the internal pudendal counterparts.

Venous drainage

- Deep dorsal vein – drains cavernous spaces and joins the prostatic venous plexus.
- Superficial dorsal vein - drains superficial coverings and joins superficial external pudendal vein.

Lymphatic drainage

- Skin – Superficial inguinal lymph nodes
- Glans penis - deep inguinal lymph nodes, external iliac nodes
- Erectile tissue, penile urethra - Internal Iliac lymph nodes.

MATERIALS AND METHODS

This dissertation is based on a random study of 28 cases of carcinoma penis admitted in Govt. Rajaji Hospital from 2003-2005. A study and analysis is made about the incidence, predisposing factors, symptomatology, clinical features & management of carcinoma penis.

Incidence

Carcinoma penis accounts for 0.4% - 0.6% of all malignancies among males in USA & Europe, whereas it is about 10% of al malignancies is Asian, African & South American countries. Its incidence is decreasing in many countries including Finland, India, USA and other Asian countries, presumably owing to increased attention to personal hygiene.

Penile cancer is a disease of older men, with an adrupt increase in incidence in sixth decade of life and peak around 80 years. There is a 2% racial preponderance of blacks over whites.

Religious Factors

These factors have a role to play depending on practice of ritual circumcision practiced in different religious groups.

Groups practicing circumcision

Carcinoma penis is very rare compared to other groups.

1. Jews - Circumcision is done in early infancy. So it is rare in Jews (neonatal circumcision)
2. Muslims – Circumcision is done between 3-14 years and less completely thus conferring less protection than Jews. (Prepubertal circumcision).

Groups not practicing circumcision

1. Hindus – In India, most cases are reported in Hindus,
2. Christian – It occurs in uncircumscribed Christian.

Etiology

The incidence varies according to circumcision practice, hygienic standard, phimosis, number of sexual partners, HIV infection, exposure to tobacco products.

Role of circumcision

Neonatal circumcision has been well established as a prophylactic measure that virtually eliminates the occurrence of penile carcinoma, because it eliminates the closed preputial environment where penile carcinoma develops.

Smegma is a byeproduct of bacterial action on desquamated cells that are within the preputial sac. Although a definite etiological role has not yet been established, its relationship to development of penile cancer has been widely observed. Improper hygiene leads to build up of smegma beneath the preputial foreskin leading to inflammation. Healing by fibrosis leads to phimosis, which tends to perpetuate the cycle. Phimosis is found in 25% - 75% of penile cancer cases. Smegma is a cheesy material rich in cholesterol, acid phosphatase, fructose & mucin, but not urea suggesting a contribution from seminal vesicles, Cowpers glands or gland of Litter, but not urine. It contains many bacteria, the significant one being Mycobacterium smegmatis. Data from large series show that penile cancer is rare in neonatally circumcised individuals, but more frequent if circumcision is delayed until puberty. Adult circumcision offers little or no protection. Thus they suggest that the critical period of exposure to certain etiologic agents may have already occurred at puberty and certainly by adulthood, rendering later circumcision relatively ineffective as a prophylactic tool for penile cancer. The preventive role of circumcision is not merely hygienic. It may also be due to removal of substantial part of the carcinoma prone area, the prepuce, which is one of the commonest site of onset of lesion.

Onuigbo reported 4 cases of penile carcinoma in 15000 surgical specimens collected over 13 year period from Ibos & Igbos group of Nigeria

who practice circumcision. Only one tumour arose on the glans. From these observations he classified penile cancer into two types.

1. Smegma (dirt) induced squamous cell carcinoma which usually occurs on the glans (within the preputial sac) and is prevented by circumcision.
2. Ordinary squamous cell carcinoma which can develop by chance as anywhere on the body. It can occur anywhere on the penis and not preventable by circumcision.

Role of Viruses

- HPV types 6 and 11 are more commonly associated with nondysplastic lesions such as genital warts and also in non metastatic verrucous carcinoma.
- HPV 16, 18, 31, 33 are associated with in situ carcinomas.
- HPV 16 is the most frequently detected type in primary as well as metastatic lesion of penile cancer.
- Maden and colleagues found that incidence of HPV infection directly correlated with number of life time sexual partners and the latter was also related to risk of penile cancer.

Role of Tobacco Products

- Hellberg and colleagues (1987) studied the smoking history of 244 men with penile cancer and matched controls. They concluded that there was significant risk of penile cancer in smokers and the risk increased with number of cigarettes smoked.
- Harish and Ravi (1985) showed that all form of tobacco products, including cigarette smoking, tobacco chewing and snuff were significantly and independently related to incidence of penile cancer.

Role of Personal hygiene

Penile cancer usually occurs in men who have a poor standard of hygiene in general and penile hygiene in particular, as evidenced by the following observations. They are the persons who are poor and usually belong to rural communities.

1. The person is ignorant of general & local cleanliness of preputial sac.
2. He cannot maintain cleanliness as facilities for cleaning (soap, water and privacy) are not available or he can not afford them.
3. He has to work hard for very long periods, and hence gets little opportunity to clean himself and considers cleanliness, a luxury.
4. A person with phimosis is ignorant of the benefits of circumcision and facilities for getting circumcision done are not available.

Precancerous lesions

1. Cutaneous Horn
2. Pseudoepitheliomatous micaceous and keratotic balanitis
3. Balanitis xerotica obliterans
4. Leukoplakia.

Carcinoma in situ of penis is called Erythroplasia of Queyrat if it involves glans penis, prepuce or penile shaft and is called Bowen's disease if it involves remainder of the genitalia or perineal region.

PATHOLOGY

Site

The lesion commences as a small ulcer or nodule most commonly on the glans penis. Other sites of the lesion are prepuce and coronal sulcus. Not infrequently, contact lesions may grow simultaneously in the prepuce and on the glans. Rarely, it may arise from the shaft.

Gross types

Depending upon the gross appearance, the lesions may be of the following type.

I. An ulcer
II. A papilliferous or proliferative lesion which looks like cauliflower growth
III. A nodular infiltrating lesion.

Microscopic pathology

Carcinoma -penis is a squamous cell lesion demonstrating keratinization, epithelial pearl formation and with various degrees of mitotic activity. This penetrates the basement membrane, and may show neural invasion, vascular invasion and invasion of corpora, urethra and deep tissues.

As most of the tumours are infected, inflammatory exudates in the deep tissue simulate tumour infiltration. Severe chronic inflammatory changes are seen around the tumour cells consisting mostly of lymphocytes, macrophages and occasional polymorhponuclear neutrophils. Areas of necrosis may be seen inside the tumour.

Spread and metastasis

i) Direct: The direct invasion by anatomical continuity into the neighbouring tissues pursues an inexorable course. The tumour invades the prepuce to tether it and makes the latter non-retractable: and later it destroys it. Buck's fascia acts as a temporary barrier protecting the corporal bodies from invasion by the tumour. Peneration of Buck's fascia and tunica albuginea permits quick spread; and the tumour may invade the scrotum, pubic region, perineum and groin. The entire penis may be destroyed by the tumour. Corpus spongiosum seems to be invaded last of all, and the bladder is rarely involved.

ii) Lymphatics: It represents the earliest route of dissemination. The lymphatic spread occurs by embolism to inguinal and to the iliac group & pelvic lymph nodes. A pre-pubic lymph node, when present, is commonly involved.

The lymphatic spread of cancer is present in about 80 per cent of cases of penile cancer, 33 per cent of all cases have proved groin metastases. Pelvic lymph node involvement has been reported in 19-25 per cent of patients. Direct spread to pelvic nodes byepassing the inguinal nodes can also occur. Rarely higher lymph nodes may be involved.

A flat and ulcerative tumour has a tendency to develop earlier nodal metastases as compared to a proliferative lesion. Similarly, lesions larger than 5cm in size and those extending to over 75 percent of shaft are also associated with increased incidence of metastases. Further, there is a greater proportion of metastases in younger patients with undifferentiated tumours and in those with carcinoma of the glans.

The metastatic growth in the femoral region ultimately leads to skin necrosis, chronic infection and erosion into the femoral vessels leading to death from massive hemorrhage.

Some of the inguinal nodes may show reticulum cell hyperplasia, giant cell reaction and fibrosis. This reaction may impede spread of carcinomatous process, but it needs further evaluation.

iii) Haematogenous : Blood borne metastases are rare, since the patient dies earliler due to complications of local and lymphatic spread. If metastases occur, they usually occur late in the course of the disease

after invasion of the corpora, or after the local lesion has been treated.

Metastases may occur to the lung, liver, bone or brain; and they are reported to occur in 1 to 10 per cent of a large series. Distant metastases in the absence of nodal involvement are unusual.

iv) Implantation spread : 'Kissing Ulcer' in scrotum.

Histological grading : Although some pathologists have classified penile carcinoma according to Broder's four grades, the majority grade them into either well differentiated or poorly differentiated grades. Most of the penile cancers are well differentiated or low grade; only 10 percent of the lesions are anaplastic. Bassett divided penile carcinomas into 3 grades. Well differentiated (grade I), moderately-differentiated grade (Grade II) and poorly differentiated (grade III).

Frew et al described two patterns of tumour growth.

i) "Solid" pattern in which the tumour consists of relatively large rounded clumps and sheets of round cells.

ii) “Cord” pattern in which the tumour is composed of smaller cell masses, sometimes irregular in outline, and with intervening small clumps and slender cords of cells. This type of tumour metastasizes earlier.

CLINICAL FEATURES

The typical patient of carcinoma penis is an elderly, uncircumcised, unintelligent person coming from the lower strata of society. However, this tumour can also occur in the young, and other sections of the society. The tumour may be present for a long time. In one of the series, 64 per cent of patients reported within 6 months, and 78 per cent within an year of onset. Many patients had phimosis and the tumour growing under the unretracatable prepuce.

The lesion may be overlooked until it reaches considerable size.

Symptoms

The first symptom of penile carcinoma is often a painless nodule. Warty growth, vesicle or ulcer, pain, bleeding or offensive discharge may appear later. No other cancer emits such an offensive odour as penile carcinoma. That is why ancients called it a 'stinking disease'. Constitutional symptoms are evident only after the development of metastasis; and there may be weakness, weight loss, fatigue and malaise. Other constitutional symptoms may be present depending upon the site of metastases.

Signs

1. The prepuce is not retractable in many cases; and the tumour covered by the foreskin endows the penis with club shaped deformity.
2. The prepuce may be destroyed by the tumour, or may have to be removed or slit opened to see the lesion.
3. The lesion is mainly of two types: proliferative (fungating) and ulcerative (infiltrative); but this division is vague as both ulceration and proliferation are usually seen in the same tumour. It is better to classify them as follows:
    a. Predominantly proliferative type- It may appear as a small lump, a pimple, a warty growth, or a more luxuriant exophytic lesion resembling a cauliflower.
    b. Predominantly ulcerative type- It presents as a non- healing ulcer which may be shallow or deep and excavating. Later on the entire penis may be destroyed or auto-amputated.
4. The lesion has everted edges, indurated base; and a variable amount of slough is present on its surface.
5. Examination of the base of penis and scrotum is necessary to mark out the extension of the lesion. Per rectal and bi-digital examination give information regarding invasion of the perineal body.
6. Retention of urine or a urinary fistula is very rarely present.

Inguinal nodes : Between 35 and 78 per cent of patients will have palpable inguinal nodes when first seen. Occasionally, the patient presents with inguinal secondaries only, the primary being hidden due to phimosis.

The palpable nodes may be due to secondary infection in the early stages, and later on due to metastasis. Marcil et al found less than half of the palpable nodes to contain tumour proved inguinal metastases at their first attendance, but this is probably the largest recorded proportion.

On the other hand, small metastatic nodal deposits may not be clinically palpable in obese persons. Many series have demonstrated that 20-40 per cent of patients with clinically negative nodes have histologic metastatic involvement.

Course of disease

Bassett wrote: “Carcinoma penis is a chronic disease and after the onset of symptoms almost all the patients lived more than 2 years, and nearly one-third lived more than 6 years”.

This is a too optimistic statement. Penile carcinoma has a relentless progressive course, causing death in most of the untreated patients within 2 years. They may die from sepsis or haemorrhage from erosion into the femoral vessels. Few patients die of distant metastases without extensive ilio-inguinal disease.

Rarely, a patient of penile carcinoma with advanced local disease and regional node metastases may have a long survival. Spontaneous regression of penile carcinoma is not reported. 5-15 per cent of patients may develop a second lesion.

Differential diagnosis

- Condyloma acuminatum
- Buschke Lowenstein's tumour
- Balanitis xerotica obliterans
- Chancre
- Chancroid
- Herpes
- Lymphopathia venereum
- Granuloma inguinale
- Tuberculosis.

These can be excluded by appropriate skin tests, tissue studies, serological examinations, cultures, staining techniques and proper histopathological confirmation.

STAGING

TNM classification

T (Primary Tumour)

T is – Carcinoma in situ.

T0 – no evidence of primary tumour

T1 – 2 cm in greatest dimension, superficial, exophytic.

T2 - > 2cm but < 5 cm in greatest dimension or tumour with minimal extension.

T3 - > 5 cm in greatest dimension or tumour with deep extension, including the urethra.

T4 – infiltrating neighbouring structures.

Tx – Minimum requirements for primary tumour assessment can not be met.

N (Nodal disease)

N0 – no evidence of nodal involvement.

N1 – Mobile, unilateral nodes.

N2 – Mobile, bilateral nodes.

N3 – Fixed regional nodes.

Nx – Minimum requirements for nodal assessment not met.

M (Metastatic disease)

M0 – no evidence of distant metastasis.

M1 – evidence of distant metastasis.

M2 – Minimum requirements for distant metastatic assessment not met.

AJCC staging

T (Primary tumour)

Tx – Primary tumour cannot be assessed

T1 – No evidence of primary tumour

T is – Carcinoma in situ.

Ta – Non invasive verrucous carcinoma.

T1 – Tumour invades subpithelial connective tissue.

T2 – Tumour invades corpus spongiosum or cavernosum

T3 – Tumour invades urethra or prostate.

T4 – invades other adjacent structures.

N(Lymph nodes)

Nx – can not be assessed

N0 – no regional nodal metastasis

N1 – Single regional lymph node.

N2 – Multiple bilateral superficial inguinal nodes.

N3 – deep inguinal or pelvic lymph nodes, unilateral or bilateral.

M(distant metastasis)

Mx – can not be assessed

M0 – no distant metastasis

M1- distant metastasis

Staging group

	T	N	M
Stage 0	Tis	N0	M0
Stage I	Ta T1	N0 N0	M0 M0
Stage II	T1 T2 T2	N1 N0 N1	M0 M0 M0
Stage III	T1 T 2 T3 T3 T3	N2 N2 N0 N1 N 2	M0 M0 M0 M0 M0
Stage IV	T 4 Any T Any T	Any N N3 N1	M0 M0 M1

Jackson's classification

Stage I (A) – confined to glans , prepuce or both

Stage II (B) – extending into the shaft of penis

Stage III (C)- operable inguinal metastasis

Stage IV (D) – involving adjacent structures, inoperable inguinal metastasis, distant metastasis.

DIAGNOSIS

Investigations

Frequently, a dorsal slit or circumcision or both may be necessary to gain adequate exposure of the lesion for histopathological examination.

Histopathology

a) Primary tumour- Biopsy of the lesion is mandatory before any treatment. It has no harmful effects. It should include enough tissue to determine the depth of invasion which decides the nature of treatment, and tells about prognosis.

Biopsy with confirmation of the tumour from the frozen section, and immediate surgical excision constitute an alternative means of diagnosis and treatment.

Pre operatively, in the examination of the surgical specimens, evidence should be sought about involvement of the urethra and corpora cavernosa, as well as the perineural and vascular extension. Also, sections should be taken at the limits of excision in order to determine surgical adequacy.

a) Nodal involvement - clinical examination of the lymph nodes has two types of fallacies.

i) The enlarged lymph nodes may not have metastases: Basset found 37 per cent of clinically malignant nodes histologically free of the tumour.

ii) The impalpable lymph nodes may have metastases in 20-33 percent of cases.

Lymph node biopsy is indicated in the following cases:

i) Patients with high- grade lesions.

ii) Patients with highly invasive neoplasm involving the neighbouring structure like urethra and scrotum.

iii) Patients with tumours larger than 5 cm.

iv) Tumours covering more than 75 percent of the shaft; and

v) Node measuring more than 3 cm in diameter.

Methods of biopsy

i) Fine needle aspiration cytology is recommended. It is of value when it is positive; negative does not rule out uninvolvement.

ii) Sentinel node biopsy- The sentinel node, which is located superior and medial to the junction of Saphenous and femoral vein in the area of superficial epigastric vein, is usually the first site of metastases; if it does not contain carcinoma, there is little chance for other groups to harbour metastasis.

iii) Inguinal node exploration provides more accurate staging with minimal morbidity.

Radiography

1. X-RAYS

Lung and bone secondaries can be identified by plain x rays

2. ULTRASOUND & MRI

- in small volume glanular lesions they add little information.

- in lesion suspected to invade corpus cavernosum, both ultrasound and contrast enhanced MRI provide unique information, especially when organ sparing surgery is contemplated.

3. CT SCAN

- Have a role in examining inguinal regions of obese patients and in those who had previous inguinal surgery.

- in known inguinal metastasis, CT guided biopsy of pelvic nodes may provide important information for consideration of neoadjuvant chemopeutic strategies.

4. LYMPHANGIOGRAPHY

Sensitivity is only 31% but no false positives.

5. RADIONUCLIDE BONE SCAN

For detection of bone secondaries.

Laboratory Studies

1) The urine contains pus, red cells and bacteria, as it comes in contact with the lesion while micturition.
2) Blood - Anaemia is usually present
   - Leukocytosis is commonly present.
   - Hypoalbuminemia may be present.
   - Azotaemia may occur due to urethral obstruction.
   - Hypercalcaemia may be detected even in the absence of detectable osseous metastases.
3) The tumour may be cultured so that appropriate antibiotic may be given.

The diagnosis is based on thorough clinical examination and histopathological examination of the lesion. An uncircumcised middle age or elderly male with a non healing ulcer of more than three weeks duration must undergo a biopsy to rule out carcinoma.

Minimal Diagnostic Criteria

Primary tumour (T)

- Clinical examination
- Incisional / Excisional biopsy of the lesion and histological examination for grade, anatomical structure invaded and presence of vascular invasion.

Regional and Juxtaregional nodes (N)

- Clinical examination
- CT Scan, if palpable inguinal adenopathy
- Superficial inguinal node dissection indicated for high grade, vascular invasion or invasive histology.
- Aspiration cytology.

Distant metastasis (M)

- Clinical examination
- Chest radiograph
- Liver function tests, serum calcium
- MRI, Bone scan.

Most patients of penile cancer belong the low socio economic group and its obvious that due to their ignorance, the time of presentation is usually delayed, delay of more than one year of 15-50% is reported in many series.

TREATMENT

SURGERY

Treatment of primary Tumour

Surgical treatment is the most reliable and widely practiced mode of treatment. Operation for penile carcinoma varies according to the extent of the growth and many other factors. A margin of 2 cm posterior to the proximal limit of the growth is expected to ensure freedom from local recurrence.

1) Circumcision - Occasionally, when the growth is confined to the prepuce, it is possible to treat it by circumcision alone. A complete circumcision is required to have an adequate tumour free margin. Circumcision alone, however, is frequently followed by recurrence.
2) Partial amputation - Partial amputation of the penis with at least 2cm margin proximal to the tumour is indicated for the lesions involving the glans and distal shaft.

The object of this procedure is to have a penile stump which is usually adequate for upright micturition and sexual function, but without or a rare chance of local recurrence. Taking a frozen section of the resected margin is recommended for microscopic confirmation of tumour-free margin of resection. However, if the stump is so short that the functions described above are not possible, or it is likely to retract into the scrotum,total amputation is preferred.

3) Total amputation - it means removal of the whole penis including its triradiate root. It is indicated when-

i) The tumour has involved the shaft.

ii) The penis is so short that the stump left after partial amputation would be buried in the scrotum, and will not be available for upright micturition and sexual function.

iii) There are radio- resistant and radio- recurrent growths and,

iv) Radio necrosis of penis following radiation treatment

The modern operation of total amputation varies slightly from that originally described by Sir A.Pearce Gould (1882).

In this operation both the crura are detached from the margins of the pubic arch, and the urethra is divided 5cms below its point of emergence from perineal membrane. An urethrostomy is made in the perineum.

There are a few problems in the total amputation described above-

i) The operation is called "total" amputation, whereas 5cm of corpus spongiosum is left over.

ii) The scrotum hangs in front of the neo-urethral stoma resulting in its wetting with urine during each act of micturition. Consequently, the patient may develop ammoniacal dermatitis of the scrotum.

iii) Meatal stricture, when it occurs, is a difficult problem and must be prevented.

iv) During detachment of crura from the pubic arch the deep arteries may retract under the bone and cause troublesome haemorrhage.

4. Subtotal Amputation

The operation is done with a transverse racquet incision enclosing the base of the penis, and 4-5 cm wide strip of adjacent scrotal wall within the ellipse. After completion of the operation, when the wound is closed, prepubic advancement of the scrotum occurs there by avoiding the problem of ammoniacal dermatitis. The crura are divided after clamping a little away from the bone for better control on vessels.

Since the parts of crura and 5cm of corpus spongiosum are left over, it is appropriate to call this operation as sub-total amputation.

A nipple of the urethra is made in the perineum by delivering the urethra through a hole in the skin after raising a tongue shaped flap of the skin in the midline.

The distal half of the urethra is debulked, split on the side and everted to cover the proximal half of the urethra. The skin flap is fed into the split of everted urethra.

Emasculation

Many authors do a radical operation instead of a total amputation for carcinoma - penis invading the corpora. In this operation, apart from removing

the whole penis including its tri-radiate root, the testis and scrotum are also removed. Four reasons are given for this procedure, namely-

i) When the penis is not there, no useful purpose is served by retaining the testes

ii) The retained scrotum hangs down in front of the neo-urethral stoma and gets wet during each act of micturition.

iii) After subsequent ilioinguinal node dissection, lymphoedema of scrotum frequently occurs.

iv) Castration removes sexual urge.

Many workers do not carry out castration as a routine for the following reasons;

i) Many patients like to retain at least some evidence of masculinity. In a radical operation after 'radical' excision of male genitlia , a "vulva" is reconstructed. Is it a too heavy punishment for the guilt of having a penile carcinoma.

ii) In future, it may be possible to reconstruct a penis for those people also.

iii) The problem of ammoniacal dermatitis can easily be overcome by prepubic advancement of the scrotum.

iv) There is no direct lymphatic communication between the penis and scrotum or testes.

v) The scrotal skin may be useful for future urethroplasty if required.

However, a radical amputation may still be required where a penile tumour is invading into the scrotum.

Treatment of Nodal Metastasis

The presence and extent of metastasis to inguinal region are the most important prognostic factors for survival in patients with squamous penile cancer. Presence of palpable adenopathy is associated with proven nodal metastasis only in 50% cases. The remaining 50% is only due to inflammation. Persistent adenopathy after treatment of primary lesions and 4-6 weeks of antibiotic therapy are most often the consequences of metastatic disease and should undergo inguinal lymphadenectomy.

Pathological criteria associated with long term survival after attempted curative surgical resection of inguinal nodes i.e 80% 5 year survival.

1. Minimal nodal disease (upto two involved nodes)
2. No extranodal extension
3. Absence of pelvic nodal metartasis.

In patients with no evidence of palpable adenopathy who are selected to undergo inguinal procedures by virtue of adverse prognostic factors within the primary tumor, goal is to define if metastasis exist with minimal morbidity for the patient.

The options are,

1. Fine needle aspiration cytology
2. Node biopsy
3. Sentinel lymph node biopsy (Cabanas)
4. Extended sentinel lymph node dissection.
5. Intra operative lymphatic mapping
6. Superficial dissection
7. Modified complete dissection (Catalona).

Ilio inguinal node dissection

Barney (1907) published the first report about bilateral ilioinguinal lymph node dissection. This is indicated if the nodes are positive for metastatic deposits. The nodal metatases can be treated by radiation therapy also, but surgery is more effective than radiotherapy.

Prophylactic node dissection - some authors do routine lymph node dissection even if the nodes are not palpable; but as it has significant morbidity and mortality, and inguinal metastases are infrequent in such cases, prophylactic groin dissection is not justified. Therapeutic node dissection - Bilateral node dissection is indicated, if biopsy of the sentinel node or non suspicious node is positive, or if clinically suspicious nodes are present from

the onset. Skinner et al employed lymphangiography to decide the extent of node dissection

i) If lymphangiogram shows no involvement of the iliac nodes, bilateral inguinal and sub-inguinal node dissection is done.
ii) If lymphangiography or exploratory laparotomy reveals involvement of iliac nodes, radical excision of ilio-inguinal nodes is indicated.

The goal of ilio-inguinal node dissection is en-bloc excision of all of the lymphatic tissue from the aortic bifurcation to the point where the femoral artery enters the Hunter's canal. It involves bilateral removal of iliac, obturator, and inguinal nodes. Many authors recommend bilateral ilio inguinal node dissection in all the cases.

Complications

Ilio-inguinal node dissection has 3-10 per cent mortality, and significant morbidity which may be seen more than 50 per cent cases in many series. The complications include sloughing of the flaps, lymphorrhea from the wound, seroma, wound infection and lymphoedema of the lower limb.

Frealey reported sloughing of the flaps in 60 per cent of cases. It occurs due to ischaemia of the flaps. Intravenous fluorescein has been shown to be a reliable indicator of adequacy of blood supply of the dermal flaps. Lymphoedema of the lower extremity is almost certain and may be worse than a

recurrence of the tumour. Frealey reported it to occur in 40 per cent of cases; and Pand and Nayak observed it to occur in 12 out of 42 cases. In a metastatic penile carcinoma, if overlying skin is involved, it is excised along with the nodes, and the defect may be covered with tensor fascia lata myo-cutaneous flap or medial transposition of sartorius muscle.

Ilio ingunal node dissection has been proved to be superior to inguinal dissection alone, because of removal of impalpable but involved iliac nodes. The disease free survival is increased, in spite of its complications.

RADIOTHERAPY

Indications

1. Young individuals with small (2-4cm), superficial, exophytic, noninvasive lesions on the glans or coronal sulcus.
2. Patients refusing surgery as an initial form of treatment.
3. Patients with inoperable tumour or distant metastasis who require local therapy to the primary tumor but who express a desire to retain their penis.
4. May be considered after a course of 5-fluorouracil has failed in the treatment of carcinoma in situ.

Before radiation therapy circumcisions or dorsal slit is necessary to expose the lesion, allow resolution of surface infection, prevent maceration and preputial edema.

Advantages

1) Preservation of the penis, especially in young patients, is the main advantage.
2) Avoidance of fear and pain of the operation.
    a) Radiotherapy has higher morbidity as compared to surgery. Many of the complications of radiotherapy require a secondary penectomy. Then why not do a primary penectomy and avoid delay in the institution of definitive treatment.
    b) The evaluation of the overall results is difficult because different methods of radiotherapy (time schedule of treatment, dose of radiation and type of delivery system, etc.) are used by different workers.
    c) The carcinoma penis is a grossly infected lesion. Infection reduces the effectiveness of radiotherapy and increases the chances of radiation damage to penile tissue.
    d) It may be difficult to differentiate between post radiation tissue changes and recurrence or persistance of the disease. It may result in repeated biopsies and three to six weeks delay in the institution of treatment.

e) The treatment schedule is usually lengthy except when iridium mould technique of Hope - Stone is used.

f) Jackson reported that nodal metastases develop more frequently after or during the course of radiotherapy than after surgery. However, the final results with regard to eventual 5-year survival are not significantly different.

g) Secondary tumour

   i) The inguinal skin tolerates radiation poorly, resulting in skin maceration and ulceration.

   ii) The presence of infection reduces the effectiveness of radiation in the lymph nodes.

   iii) Similarly, the perilymphatic fat, if present, reduces effectiveness.

   iv) Radiation therapy may result in lymphoedema.

An ideal patient for radiotherapy is a young individual with a small (2-3cm) non-invasive or very superficially invasive exophytic type of lesion of the prepuce, glans or coronal sulcus; this type of lesion is likely to be cured. Other indications include :

(i) Patients who refuse operation

(ii) Patients with advanced lesion or with distant metastases who want to

retain his penis. In these cases palliative radiotherapy is given. Thus, any type of lesion, primary and / or secondary, can be treated by radiotherapy.

Methods

All modalities of irradiation have been used in the treatment of penile carcinoma:

1) Low energy radiation (60 KV) - It is indicated for small superficial lesions. Single direct fields are used, and only small areas of normal tissue of the penis are irradiated. A margin of over half a centimetre should be allowed beyond the visible and palpable disease. The dose time schedule is 5,000 - 6,000 rads in 3-5 weeks. It controls a small tumour in 85 percent of cases. Murell and Williams reported 3 year and 5 year survival to be 50.2 and 40.4 per cent respectively. Low voltage X-rays have the disadvantage that the penile skin seems unusually prone to radio-necrosis at doses tolerated by other organs.
2) Mega - voltage radiation : Co_{60} or some other mega - voltage source is used for mega-voltage teletherapy. It is indicated for treating infiltrating and advanced carcinoma and for lymph node bearing area. It avoids low surface dose due to electronic build up. The dose schedule varies between 5,000 rads in 3-4 weeks to 6,000 rads in 5- 6 weeks depending upon the volume. Duncan and Jackson treated 20 patients with 90 percent rate of control of

primary tumour with 5,000 to 5,700 rads over 3 weeks. They encountered penile necrosis in 10 percent and urethral stricture in 30 percent of cases.

3) Interstitial radiation - Radium needles or other gamma emitters (radon seeds, gold grains, iridium wires) may be implanted into the tumour itself for giving a concentrated large dose of radiation in a relatively short time. A superficial small and well differentiated lesion can be treated by single planar implant covering the lesion with adequate margins of normal tissue, delivering 5,000 to 6,000 rads in 5-6 days. An implant is better indicated as complementary treatment of residual tumour after external irradiation has been delivered. In these cases the implant should be limited to the lesion itself with minimal irradiation to the normal neighbouring tissues. No crossing needles are needed, and 1000 - 5,000 rads are added to external radiation. Interstitial therapy using radium needles is being abandoned as it causes many local complications because of concentrated dose delivery in a relatively shot time. Iridium wire is replacing radium needles, and it gives better results with lesser morbidity.

4) Surface radiation - Originally radium mould was used but now other isotopes such as iridium and tantalum have replaced it. It is an excellent method using high energy radiation with minimal morbidity. It is best suited for lesions of the distal half of the organ. It should not be used in obese persons with short penis. Most moulds used for irradiation have been

of cylindrical shape with several rows of short needles. But this arrangement in general gives a higher dose of radiation to the surface of the organ than in the axis.

Boledorn has described a box mould for uniform irradiation dose - with box mould - 5,500 rads in 8 days.

Iridium mould method - A plastic mould of cylindrical type is fitted to the penis over which the patient is taught to slide an outer cylindrical applicator. When he has mastered this and has been instructed how to note the duration of each application, the outside cylinder is armed with iridium - 193 wire, its length measured so as to give a calculated dose of 6, 000 rads to the tumour, but only, 5,000 rads to the urethra. The applicator is removed by the patients when he wishes to urinate, and placed in a leadlined safe place beside the bed. The applicator is worn for 12 hours/ day up to 7 days. There are a few advantages in this method: (i) no radiation hazard to nursing staff as the patient wears and takes off the applicator himself, (ii) the iridium wire is easy and safe to handle, the dose being readily and accurately calculated, and (iii) the tumour receives the full dose while the urethra escapes radiation injury.

Within 2-3 weeks, there is marked fibrinous reaction, which soon resolves with local steroid - ointment and heals within a month. Salalverria et al treated 4 patients of stages 1 and 2 by this method and got 92.3 per cent crude 5 yr survival rates.

Electron beam therapy - It is a good treatment for superficial lesions. 400 rads are given daily for 10 - 11 treatments in 12 - 17 days. It gives good functional result when care is taken to avoid infection and trauma. It results in local control of tumour in 65 per cent and urethral stricture in 12 per cent of cases. Kelly et al treated superficial lesion in 10 patients using electron beam with 100 per cent control after one year. The complications of this treatment include oedema, pain, telengiectasis and meatal stricture.

Laser therapy - Laser beam can be used to destroy the tumour. It controls the local lesion effectively without mutilation and functional loss; and with cosmetically tolerable scar.

Choice of radiotherapy

Primary tumour

In-Situ Carcinoma - Radium mould is the treatment of choice. In exceptional cases, where the lesion is limited, superficial irradiation can be used.

Small superficial lesion-Low energy radiation of contact therapy using a mould is the method of choice.

Secondary tumour

Radiotherapy is not as effective as it is to the primary. But as the tumour can recur even after a thorough block dissection, Murrell & Williams prefer radiotherapy as the treatment of choice for inguinal nodes. One can control the diseases by mega-voltage irradiation and if necessary, with interstitial radiotherapy of residual tumour. If the nodes are mobile and operable, node dissection is the treatment of choice. But if they are inoperable, or surgery is refused, or the patient is a poor risk, radiotherapy is indicated.

Post-Operative Radiotherapy

If the surgical excision has been localized, the method of irradiation is the same as if surgery has not been done. After amputation, when the tumour is found at the edges of the specimen, external irradiation with megavoltage is indicated.

Palliative Radiotherapy

It is indicated in advanced cases with completed destruction of penis with local spread and /or large ulcerated fixed nodes in the groin or when there are distant metastases. With megavoltage radiation, 3,000-4,000 rads in 2-3 weeks are given to reduce or heal the ulceration or reduce the tumour sizes. Occasionally, large doses of radiation are well tolerated and may result in significant palliation.

Complications

There are many complications of radiotherapy. They include pain, oedema of the legs, meatal stenosis, penile necrosis, urethral fistula, telangiectasis, testicular damage and neoplasia and stricture urethra.

Results

Many workers have reported varying results after radiation treatment. BIoedorn has given the following figures.

Almost 100 per cent cure rate is obtained in early lesions which are less than 2cm in diameter. If the lesion is large but still limited to the distal end of the organ, the cure rate is 75-80 per cent. The overall cure rate of all the patients treated by radiotherapy is 65 per cent.

CHEMOTHERAPY

Role of chemotherapy is not as convincing as surgery or radiotherapy in penile cancer. The following drugs and their combination have been used.

Bleomycin

It is an antiviral antibiotic. It is a water soluble basic polypeptide. Ichikawa and associates (Japan) reported 50 % response in 24 previously

untreated patients with squamous cell carcinoma of penis. An Ugandan report also showed regression rates of tumour by 45% with bleomycin.

The other agents used are vincristine, methotrexate, cisplatin.

COMBINATION CHEMOTHERAPY REGIMENS

VBM (8-12 weekly courses)

Vincristine	1 mg	IV day 1
Bleomycin	15 mg	IM day 6 and 24 hours after Vincristine
Methotrexate	30 mg	Orally on day 3

PMB (every 21 days fro 4-6 cycles)

Cisplatin	100mg / m^2	IV day1
Methotrexate	25mg / m^2	IV bolus days 1 and 8
Bleomycin	10mg / m^2	IV bolus days 1 and 8.

Indications

1. Fixed nodal metastasis
2. > 4cm mobile nodes in inguinal region
3. Pelvic nodal metastasis
4. Adjuvant role in high risk patients with bilateral positive.

   Mobile nodes < 4 cm when

   i. >2 nodes are positive for tumour cells.

ii. Extranodal tumour extension

iii. Positive pelvic nodes

Reconstruction of penis

After partial penectomy

Free flap reconstruction of the penis with a radial forearm flap in most centres is considered to be the modality of choice. Additionally the upper lateral arm flap has also proved to be effective. This flap has thin, relatively non hirsute skin with dependable blood supply and cutaneous circulation. Because these flaps have dependable innervation that can be elevated with the flaps, they can provide reconstruction with erogenous sensibility.

After total penectomy

Ideally phallic reconstruction should meet the following requirements.

1. One stage microsurgical procedure.
2. Creation of a competent urethra to achieve normal voiding.
3. Restoration of phallus with both tactile and erogenous sensibility.
4. Phallus with enough bulk to allow implantation of prosthetic stiffner for vaginal penetration.
5. Aesthetic acceptance by the patient.

Successful reconstruction with microvascular transfer is now possible. Gore Tex serves well for corporal reconstruction. It also allows for tissue

ingrowth, limiting migration of prosthetic elements. They can be anchored to the pubis and ischial tuberosities, thus stabilizing the device.

Micturition After Penectomy

Surgical treatment of carcinoma -penis may disturb micturition in two ways.

After total and radical amputation, the patient has to micturate in sitting position like a woman, and this may cause severe psychic disability in many patient.

The patient may have dysuria due to meatal stenosis. Oalley decribed a patient of carcinoma penis who, after total amputaion of penis, devised a funnel like stainless steel tube to help himself micturate in standing position.

To prevent urethral stenosis, many methods are described.

1. Walker's method -The urethra is brought down to the perineal wound, turned and sutured to the skin.
2. Flock & Culp method- The distal end of the urethra is formed into flaps and sutured to skin edges.
3. Badenoch's method -The distal end is slit to form lateral flaps which are stitched to the surface at a distance from the edges of the skin.

4. Rob & Smith's method -The sheath of corpus spongiosum is fixed to the edges of the stab wound in the skin by sutures inserted at the base, and the urethra is left hanging free distal to the skin edges.
5. Higgins method -The urethra is divided obliquely and sutured to the skin.
6. Sawhney's method - He slit opened the distal urethra antero-posteriorly for 0.5cm and designed two triangular flaps on each side from the perineum and medial side of the thigh based posteriorly. The flaps were sutured in place draping the urethra, suturing the skin edges using 4/O chromic catgut.
7. The nipple urethrostomy.

Sexual problems post penectomy

The penis is the male organ of sex; penile carcinoma and its treatment significantly affect sexual activity. Sexual intercourse is not purely a penile act, carcinoma-penis not only disturbs the sex-act at the penile level but also disturbs the psyche of the patient. All these factors disturb the sexual activity significantly. Frew et al observed that only a few patients were having regular sexual intercourse when the disease was diagnosed. Only 4 of 116 patients had regular intercourse before operation. When an early small lesion is treated by radiotherapy, the sexual function is reported to be preserved.

After partial amputation, many authors have reported satisfactory sexual function which depended upon the length of the residual stump. It is reported that, with 4-6cm of corpus cavernosum remaining after partial amputation, 45 percent of the patients could have sexual intercourse, and it was 25per cent of those with 2-4cm of penis remaining. However, Frew et al reported that of the 16 patients of partial amputation who were having regular sexual intercourse after operation did not succeed, although 2 had occasional erection., Further out of 23 survivors of partial amputation in Frew et al series. only one could produce four children after operation. Sexual intercourse is not possible after total amputation; it may become possible if a new penis is reconstructed.

Psychologial aspects post penectomy

Carcinoma penis is a lesion which threatens (i) the life of the victim as it is a -cancer' and (ii) the penis itself due to surgical treatment. Hence, it produces significant psychological reactions. Goel et al studied this aspects in 34 selected patients of penile carcinoma and described it in 34 selected patients of penile carcinoma and described it in detail. The psychological reaction to penile cancer merely starts with the onset of the disease as the patient is often ignorant or negligent. It commonly appears in the subsequent course of the diseases. The reaction depends upon many factors.

1) The patient's character type

2) The age of the patient-The younger the patient, more severe is the reaction. In elderly patient's the chief problem is connected with death, where as in younger ones it is a mixture of many problems connected with life and sexuality.
3) The socio-economic status of the patient.
4) The state of the disease, and the nature and severity of the treatment.

Most of the patients of penile carcinoma are of 'careless' type and are from lower strata of the society. The disease does not produce any reaction in most in the beginning, and they neglect their disease till its horrifying appearances and progressive nature produces anxiety. Many of these patients are mentally prepared for penectomy. Very few patients belonged to 'careful character' type. They have a severe anxiety reaction, which brings them immediately to a doctor. They get panicky on becoming aware of their disease and the possible result of treatment. The loss of penis constitutes a blow to the ideas of masculinity, and it is very difficult for him to face the prospect of losing an emotionally and functionally important organ.

PROGNOSIS

As with any other malignant lesion, the prognosis is variable and depends upon the following factors.

1. Age of the patient -The tumour is likely to be more malignant in patients below 50 years of age.
2. Gross appearance -Ulcerative tumour are usually associated with poor five year survival rates.
3. The state of the disease - If the lesion is limited to glans penis, 5-years survival vary from 70 to 90 percent after partial amputation. Lesions larger than 5cm in size, and those extending to over 75 percent of the shaft are associated with decreased survivals. However, the relationship of the lesion size or presence of metastases and decreased survival has been disputed. A patient having a highly invasive neoplasm involving the neighboring structures like urethra and scrotum has a poor prognosis. Inguinal nodes-prognosis is markedly affected by the presence or absence of inguinal metastases. This factor affects the prognosis much more than any other factor. Cures of carcinoma penis are seen in those patients in whom no cancer cells are found in the nodes. Permanent recoveries in cases of proved metastases are relatively few. Yardley reported a case of grade four anaplastic carcinoma of the penis with

inguinal metastases treated by partial amputation with bilateral inguinal node dissection. 17 years after this, he came for treatment of benign hyperplasia of the prostate. Though he had mild lymphedema of the legs he was free from carcinoma - penis. The overall 5-year survival rate in the presence of nodes with positive findings ranges from 20 to 28 per cent; among patients selected for inguinal adenectomy, 5-year survival rate is 50 per cent.

4. Histo-pathological findings - Most of the tumours are low grade and slowly growing. Staubitz et al found 10 per cent of the lesions to be anaplastic. Many investigatiors reported reduced survival rates in patient with anaplastic lesions. However, a number of workers noted no correlation between the histological grading and survival. Frew et al advanced evidence for a more favorable prognosis when the pattern of growth was in clumps rather than in solid cords. El Dimiry et al reported similar observation.
5. It is observed that penile carcinoma with phimosis and severe diffuse inflammation is associated with poorer prognosis. Also, the overall results depend upon the socio - economic status of the patient. Further, if there is a recurrence after the primary treatment, the prognosis is less favorable.

Recurrence

A constant source of worry to all concerned in the treatment of any cancer is recurrence. It is true for carcinoma- penis also. Even one cancer cell, if left over or escapes, may be enough for recurrence. There is no method known by which one can detect the leftover or escaping cancer cells. A major problem in the treatment of primary tumour is local recurrence, which occurs approximately in 10 percent of patients. Simple circumcision, carried out for prepucial lesions, is frequently followed by recurrence. There may be recurrences at the sites of nodal metastases after treatment of the primary, secondary or both. A prepubic lymph node is said to be responsible for recurrence at the base of dorsum of penis after amputation.

PREVENTION

Primary Prevention

Penile carcinoma is an almost totally preventable disease, provided special emphasis is given for better health education and prepucial hygiene, and if necessary circumcision is done in infancy. After circumcision, the penis is cleaned automatically by the direct contact and friction with the undergarment. Further, circumcision removes a considerable portion of carcinoma prone skin. Hence compulsory circumcision at birth is recommended by many authors, and it is a routine practice in many hospitals in the west. The present neonatal circumcision rate is about 80 per cent in USA and 40 per cent in Canada. However, many authors are very critical of this routine practice as the prepuce provides a natural protective cover to the glans and external urinary meatus; and it has an important role to play in the sexual act. Circumcision is not a substitute for poor prepucial toilet which should be taught to every child.

Secondary Prevention

It aims at early diagnosis by self-examination.

1. If a lesion occurs on a circumcised penis, it is well suited for self-examination, and is easily identified.
2. The penis is an external organ and is well suited for self examination which should be taught to every male by proper health education. A non-healing ulcer, nodule or wart on the penis warrants immediate medical consultation.

OBSERVATION

1. Age Group

Common age group 40-60 years.

2. Religion wise distribution

27 cases Hindus

1 Case Christian

No Muslim cases

3. Socioeconomic Status

Out of 28 cases, 25 cases were from low socioeconomic status.

4. Circumcision

Out of 28 cases, no cases were circumcised.

5. Pre-Malignant lesions

Out of 28 cases, 23 cases had leukoplakia, a pre-malignant lesion.

6. Symptoms

Most of the patients presented with phimosis, pain, foul smelling discharge, itching. Out of 28 cases, 3 cases were operated outside and 13 patients had evidence of phimosis.

7. Gross appearance

1. Ulceropoliferative growth - 18 cases

2. Ulcerative growth- 9 cases

3. Warty growth - 1 case

8. Histopathology report

24 cases – well differentiated squamous cell carcinoma

4 cases – poorly differentiated squamous cell carcinoma

9. Stages of presentation

Stage I – 4 cases

Stage II – 5 cases

Stage III – 17 cases

Stage IV – 2 cases

Recurrence in 3 cases

Majority of cases presented late.

10. Surgeries done

Total Amputation with perineal urethrostomy with emasculation and block dissection – 12

Total Amputation with perineal urethrostomy – 5

Partial Amputation – 3

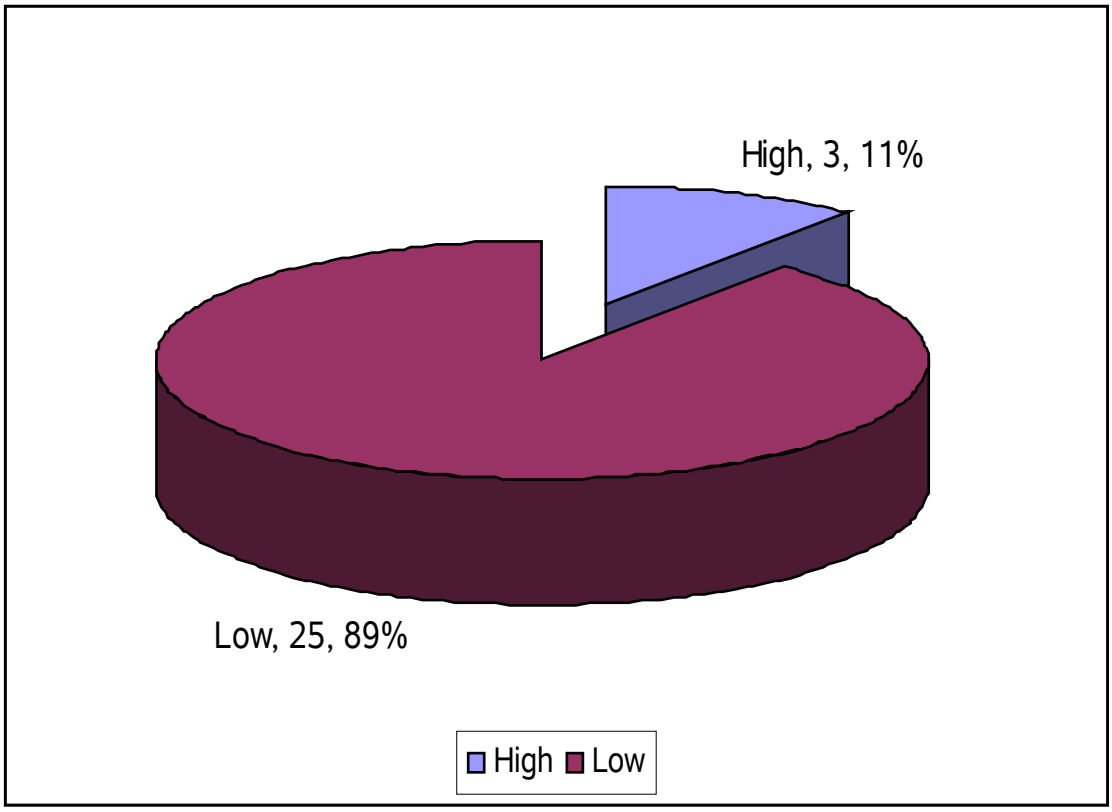
Partial amputation and block dissection – 2

Total amputation with perineal urethrostomy with emasculation – 1

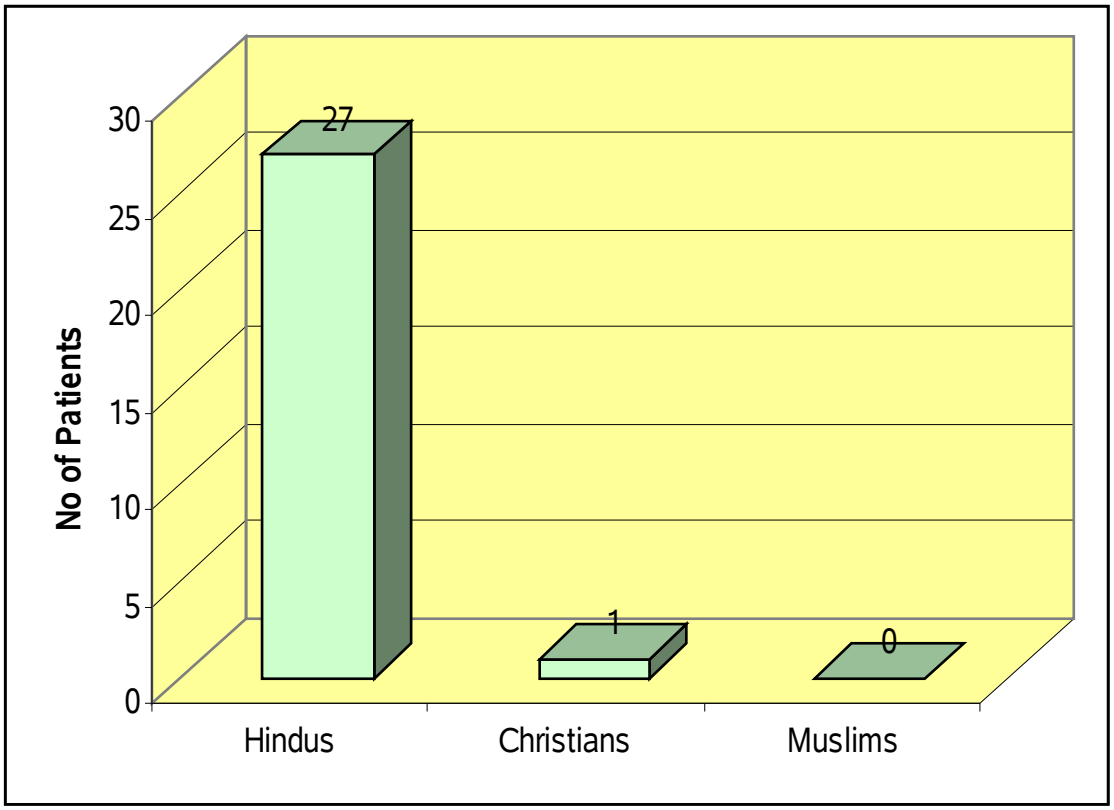
Total amputation with perineal urethrostomy with block dissection – 1

Interval block dissection – 2 cases

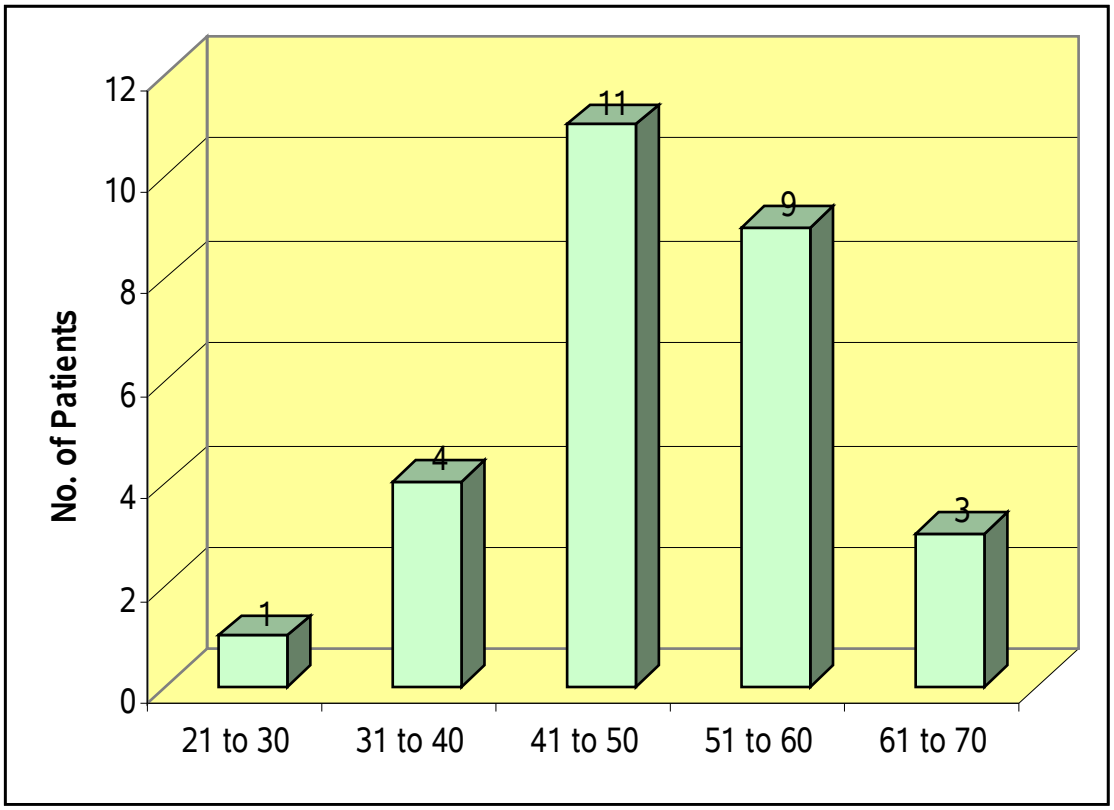
Socio Economic Status



Distribution Religion Wise



Age Distribution



11. Management of recurrent cases

3 recurrent cases reported following penectomy without

block dissection : 2 cases – operable nodes – interval block dissection done.

1 case – fixed nodes – palliative chemotherapy given.

2 cases presented with fixed nodal secondaries in inguinal region – referred for chemotherapy.

All cases of recurrence within 2 years.

12. STD association

All cases were subjected to HIV/VDRL screening

H/O exposure in 19 cases

4 patients VDRL positive

No HIV positive cases.

13. Followup

Out of 28 cases, 18 cases were followed up. 10 cases lost followup. Of the cases followed up, 3 cases developed nodal recurrence following penectomy. Out of 17 cases of block dissection done, 8 cases developed wound dehiscence. For one patient skin grafting was done. Three patients presented with fixed Inguinal nodal secondaries, of which one was recurrent following penectomy alone. All three cases referred for chemotherapy.

CONCLUSION

1. Peak incidence of carcinoma penis in fourth and fifth decades of life.
2. Majority of cases from the low socio economic group.
3. Most of the cases had evidence of a premalignant lesion in the form of leukoplakia.
4. Delayed diagnosis mainly due to late stage of presentation of the patient.
5. History of STD exposure in majority of patients.
6. Surgery is the main modality of management.
7. Total Amputation with perineal urethrostomy and emasculation.
8. If positive nodes, bilateral inguinal block dissection observed as an ideal form of management.
9. Carcinoma penis can be prevented by good penile hygiene and neonatal circumcision.
10. There is a high chance of cure in cases of early detection and planned management.

PROFORMA

Carcinoma Penis - A Case Study

Case No:

Name : Address : DOA :

Age : DOS :

Religion : DOD :

Socio Economic Status :

H/O Presenting illness :

1. Ulcer/Swelling Site

   Onset

   Duration

   Progress

2. Pain
3. Foul smelling discharge
4. Bleeding
5. Itching
6. Micturition difficulties
7. Loss of Appetite and Weight

Past History Diabetes

Hypertension

Tuberculosis

H/O Circumcision

H/O STD exposure

H/O Leukoplakia

H/O Irradiation

H/O recurrent balanitis / balanoposthitis

Family History : Married / Unmarried

Children

Personal History : Smoker / Alcoholic

Clinical Examination :

1. Site of Lesion
2. Type of Lesion (Ulcer / Growth)
3. Bleeding
4. Foul Smelling Discharge
5. Poor Stream
6. Inguinal nodes
   1. Unilateral / Bilateral
   2. Mobile / Fixed
   3. Tenderness

Investigations

1. Hb%

2. TC DC ESR
3. Urine : Albumin
   Sugar
   Deposits
4. VDRL :
5. HIV :
6. X-ray chest PA View
7. USG Abd & Pelvis
8. Biopsy
9. FNAC Lymph nodes
10. CT Scan
11. MRI
12. Stage of the disease
13. Treatment given
    Surgery
    Radio therapy
    Chemo therapy
14. Follow up
15. HPE Report

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