Epithelial Cancer: its Pathology and Treatment

Joseph Bell
Synopsis.

Cancer in general.
Nomenclature defective.
What is a Cancer?

Distinctions between Simple & Malignant Growth.
No single element diagnostic.

Changes in the Blood in Cancer.
Chemical Changes.
Infection from sores etc.
Altered destructive power of the tissues.

Anatomy of Epithelial Cancers.

Position.

Internal Character and Appearance.

Microscopic Characteristics.
Cells.
Nuclei.

Blood Cells.
Laminated Capsules.
Stroma.

Pathology of the:
Frequency in the Sexes.
Age at which they occur.
Average duration of life.
Hereditary or not?
1839

Of the constitutional causes.

Special Pathology & Treatment

1. Cancer of the Lower Lip
   Differentiation, diagnosis
   Sex & Age
   Duration
   Treatment
   Modes of Removal
   Prognosis

2. Of the Tongue
   Age, Sex, Duration
   Cause of fatal result
   Treatment, Prognosis

3. Of the Penis

4. Scrotal Testes Cancer
   Peculiarities
   Cause
   Treatment

General Summary
The great class of Diseases, united under the general term Cancer is a most always be, one of the most interesting as one of the most painful subjects of study, as well to the Physician, as to the Surgeon.

Known and feared from the earliest ages, of which we have medical records, it is not till within the last few years, that the intimate anatomical structure of cancerous growths has been investigated.

The old names, some expressive, some again far-fetched, are numerous and as vague as complicated, and it would be an endless task to consider them, and the various themes on which they are con-
nected, besides the results would be of little practical value.

But since the commencement of the present century and especially within the last 20 years, much patient, minute, and accurate study has been devoted to the subject, and has cleared up much, both as regards its Pathology & Anatomy, especially the fine minute anatomy as revealed by the microscope.

But while acquainted with its intimate structure, we have as yet found no specific to abate its malignity — and though the knife of the surgeon, wielded with the greatest skill & daring, may for the time remove its outward manifestation; alas, how seldom can he extirpate the disease.
Cancer. What is a Cancer?

Cancer is now a general term applied to all varieties of malignant growths. This however is merely substituting a new word for an old and we must now ask, what constitutes a malignant as distinguished from a simple growth.

This is a very difficult question to answer and (strictly speaking) never can be answered. And why? Because in zoology, as in Nature there are no abrupt transitions, no sharp line of demarcation has ever been, or ever will be drawn between simple and malignant tumors. But practically we can by establishing certain characters which we say are common to most malignant growths, keep the most marked cases of each separate in a manner useful for all practical purposes, though we cannot prevent the less strongly marked specimens from mingling with and being confounded with each other.

The following are a few of the most important practical distinctions between simple and malignant growths.
Walshe on Nature & Treatment of Cancer.
 Lond. 1846, p. 4.
Malignant growths possess in a high degree, the property of infiltrating the normal tissues. Waldeyer, with especial stress upon the circumstance that cancer is an infiltrating growth, says: "There are certain formations of this class (growths) which while they act on the tissues in the manner just referred to tend also to spread among the elementary molecules of those tissues, to cause atrophous destruction of existing particles, and prevent the evolution of similar new ones. Such is the nature of the process known as infiltration, a process to all appearances simulative in its effects, of conversion or transformation of the original tissue into material identical with that of the new growth. ... a single genus of..."
Malrother, Conneeuse. Prix 1857.

In malignant growths certain corpuscles are present, infiltrated among the meshes of a fibrous structure. These corpuscles or cells, as seen under the microscope, vary in form and size, but are so far limited in that they are governed by the same law of development, i.e., endogenesis, and generally rapid increase by means of nuclei & nucleoli, at first contained in — and eventually liberated from — a mother-cell.

Lebert, one of the foremost advocates for the power of the microscope in establishing a certain diagnosis in doubtful cases, at one time regarded the presence or absence of a certain cell, pathognomonic, as believed that the true cancer cell could always be distinguished from every other cell formation — but there seems to be no
Bennett op. cit. p. 170.
Payet op. cit. Vol. 11, p. 300.

Traité pratique des M. Connaissances. p. 16.
doubt. That this is incorrect and that
the opinion given by Profs. Bennett
Paquet & Müller is the true one, viz.
that no single element is diagnostic;
but that when such cells as have been de-
scribed, are found infiltrated among the
meshes of a fibrous structure, in a certain
manner, the diagnosis of the cancerous na-
ture of the substance can be given with tolerable
accuracy.

Indeed Lebert himself, in a later work,
from which we have already quoted, admits
this: "An isolated cell being given, it is possible
always to recognize, by microscopic exam-
ination whether it is cancerous or not; we
will unhesitatingly reply in the negative.
But the question we have always endeavored
to solve is the following, a malacic tissue
being given, can we discover, by microscopic
inspection whether it is cancerous or not?" -
So this we do not hesitate to reply in the
affirmative." But even in this
wider sense the microscope cannot be re-
garded as infallible: The cases in which
M.M. Velpeau & Lebert differed, as to
Spenes, Principles of Surgery, Ed. 2, p. 65

Malgnant

Robitansky, Path Anatomy, T. 1, p. 404
the name by which they should be called. Stated by their results, that for all practical purposes, the practical eye, the delicate touch and the vast experience, of the great physician, were more to be relied on, than the opinion of the eminent microscopist, trusting only to his microscope.

3. Malignant growths tend to soften, ulcerate, and the ulceration when once established manifests no disposition to heal: "makes no advance towards separation, but proves truly specific and incorrigible."

4. Malignant growths result in, or are connected with a certain moral state of the constitution, dyscrasia of Pochtausky, manifested in the hasty excessive production of new cancers (in the terms are synonymous) in other parts or tissues of the body, or, perhaps terminating in "insanity of the blood," anaemia, the more readily as constitution is interfered with.

This may be the proper place to ask, what is the seat of this morbid state? Is it

a condition of the blood or of the tissues?  
If of the blood, a change in what, in its  
chemical or physical characters?  So these  
questions we cannot give in the present  
state of Science a satisfactory answer.  
We know that probably the whole constitution  
of the blood is not perturbed, in we see  
involution & growth going on long after a  
cancer has made its appearance.  Also there  
is no visible element in the blood which  
can be recognized as a cancer-structure  
except when detached pieces of cancer-structure  
have entered the vessels as a mere result  
of physical communication between the vessel  
and the diseased part.  

Again with regard to the chemical theory  
which is principally held by the Vienna  
school of Pathologists with Pelitansky at  
their head.  In it the so-called Cancer  
crisis is regarded as one of many, all of  
which come under the head of Albuminuria  
(hypomiae of Simon), "in which the blood is  
characterized by deficiency in fibrin, by prepon-
derance of albumen & generally speaking, also.
of blood globules. --

The cancer dyspepsia: in it the blood affords evidence of the two great quantities of albumen by the presence frequently of albumenic acidaceous infiltrations of bowels spleen liver etc.

by inflammatory products, albumenous, while emulsion like in part slowly solidifying, ulcerating or cancer forming exudates. It is frequently coincident with abundant fat formation.

The dyspepsia is especially in voluminous exuberant cancers of acute growth, and of the medullary character. This state of the blood may be either primary, or developed secondarily out of a tuberculous local cancer.

The white subject of the chemistry and constitution of the blood in disease as even in health has still to be strongly investigated, and it seems probable that a time will come when the attention of men of science will be more directed than it ever has been, into the study of chemical physiology or physiological chemistry, and that great discoveries will be made which will advance the practice of our art as far as again as within the last half century it has advanced, with the aid of the
Another view may be taken, viz. that the tendency to cancer formation is not so much in the blood, as in the tissue of the part, at least on the first manifestation of the disease. This view would have it, that some modified alteration takes place in the inherent properties of the blastema, causing an altered selection from the blood vessels of the part, and a corresponding change in the tissues formed. Thus the connective tissue of a healthy mamma receives a blow, this perhaps acts after a little as a stimulus to circulation, some unknown change in the selection powers of the tissues begins, development of cells commences in the part, without a due development of stroma; the cells have no tendency to organization, but they join together from an apex, alveoli in the sinuses of the cavity stroma. The surrounding tissues become implicated in this rapid process like their vitality are absorbed or sloshed, the cells increase are well supplied with blood vessels, and ill supported by the surrounding tissue, having also little stroma, the
cells give way when touched, and bleed; the disease is then called a erupting cancer.

If the stroma is developed along with the cells, perhaps in greater proportion a new tissue is formed. The ordinary cells of the part increase and a so-called epithelial growth is the result differing in no essential particular (I believe) from the so-called true cancer, except in what can be explained by the situation and connections in which they are found.
Robitomsky: op cit. vol 1. p 285

Vichard in the Wungtupa. Vahlcondaryen. 1 106
Paget op cit. vol 11. p 413.

See footnote to p. 337. of Syd. Sex. of Delpeaux on diseases of the Breast.
Anatomy of Epithelial Cancers

Position These growths are confined almost exclusively to the mucous membranes and common integuments — on the mucous membrane of large intestine, stomach, rectum, bladder, tongue. On the integumental and subcutaneous structures of the lips, face, scrotum, glans penis, prepuce, external labia, more rarely of the trunk extremities, ears and eyelids. And very rarely as a primary disease it attacks the regional lymphatic glands. As a secondary disease it is common in the lymphatic glands in anatomical connection with its primary seat. Instances are given though they are very rare of its recurrence in the lungs, liver, or heart.

Mr. Duckett states that he has examined at least 6 cases of epithelial cancer of the mammary gland, all which cases had been supposed to be cancer. Sometimes, but had no enlarged glands in the vicinity, the appearances presented were as if the lymphatics had become choked into
reason not yet clear p. 28.

Pyet op. cit. vol ii. p. 412.
Lebert op. cit. p. 665.

Wedd. op. cit. p. 550.
Epithelium, had distended a breast, and as if subsequently the epithelium had continued to be erected in enormous quantity even granting that this was epithelial cancer. Other observations are wanting, it is a rare form of the disease.

In considering the anatomy & pathology of epithelial growths, I omit the cancers of the uterus & its accrescences, both because they are not generally included under the head of what surgeons call epithelial Cancer, & also because that organ seems to be the seat not of one, but of all the varieties of malignant disease, which seem to blend into a result from one another in the most perplexing manner.

By far the most common seats of epithelial cancer are the lower lip at or near the junction of the skin and mucous membrane; next, in the penis, especially the inner surface of the prepuce and glans. Epithelial Cancer, or a disease very like it is common in the Scrotum in some parts at least of this country. Though it appears to be almost unknown in the Continent as we
Robins\textsuperscript{\textdegree} op. cit. 1 287.

shall see hereafter, while the epithelial cancer of the anus is pretty common, there which is one of the larger groups in the country.

It must be noticed that these growths, in order to select as their place of attack, the very point where the mucous membrane and the common integument join each other.

*External Characteristics and Appearance.*

These are not easily described in a few words as the forms which epithelial cancers take are very numerous, the variety depending both on differences of position and on the age and condition of the tumours.

They most frequently occur thus on the skin, presenting a warty, foliated surface, overgrown with luxuriant papillae, but this is only while they are yet young. Before ulceration has begun, it will give as a special feature in the external appearance of epithelial cancers that they have a botryoidal character, which is very expressive of the appearance presented by the clusters of papillae when cleared from the detached
Page 18 of 18.
epidermal scales, and the foul ichorous discharge which is usually present.

The papillae are generally flat-sided, pyramidal or conical, apparently very vascular and their surface, when the thin opaque cuticle which once there is removed, has a pink selenium or brassy fluid hue.

Sometimes the papillae are very coarse and large, and divided into apparent lobes by deep clefts. Sometimes they grow out in a conical form, covered with many layers of a thick hard scale.

I have seen one removed from the under lip fully half an inch long and little more than quarter of an inch in diameter at the base. This form as Dr. Paget observes is often not easily distinguishable from syphilitic papillae.

In shape and appearance, the tumours are Portenian, but the same plan of construction is seen in them all; by the papillae enlarged alternate and showing on microscopic examination, the cancerous elements which are born to be described.

With regard to the papillae, the follow-
op cit vol if p. 620.

In context: Do you see...?
sentences of Mr. Paget are most impor-
tant. "Heretic is the essential distinc-
tion between a simple a common warty
or papillary growth and a cancerous one.
or warty cancer. In the former, the papillae
retain their natural structures; however
much they may be multiplied or changed
in shape or size, they are either merely hy-
perthrophied or infiltrated with organized
inflammatory products; however abundant
the epidermis or epithelium may be, it only
covers and sheathes them.

But in the warty cancer, the papillae
are themselves cancerous; more or less of
their natural shape, or of the manner of their
increase may be traced; but their natural
structures are replaced by cancer structures,
the cells like those of epithelium lie not
only on, but within them.

What though at first he appears to differ
really gives the same description. If we
examine cancerous tumours, projecting and
mulberry-shaped still not ulcerated, or if
we take the hard and warty tumors in
cases where ulceration is already established
we shall only find the same papillae with a notable augmentation of vascularity and nutrition, the papillae in a word, notably hypertrophied, and having the superficial layer much thickened. Then half a page in he adds: "Combined with the papillary hypertrophy we find in the scarred tissue, epidemic cells in all degrees of development," but differing from common epidemic cells in having a more voluminous nucleus, and an unusual development of nucleoli, in other words having all the characters of malignancy, shown in increased endo- 
egem development.

Again Virchow adds the weight of his authority. Papillary hypertrophy with enormous development of cells on the sur-
face is still not (necessarily) cancerous; it consists rather in this, that cavities alveoli occur in the inside of the diseased 
organ, which are filled with cells of an epi-
dermal character.

While yet in the young state (before ulcer-
ation has begun, epithelial cancerous growths
op cit 415

Post op cit 428
may be divided as has been shown by Mr. Paget, into two varieties — the superficial or ulcerating and the deep-seated. There is of course no sharp line separating these two kinds as there are many species transitional and intermediate. Sufficient observations have not been made to ascertain the relative frequency of these two kinds in different positions. Deep-seated ulcers are more frequent on the tongue, and superficial ones on the mucous surfaces, especially of the genital organs. Deep-seated tumors with ulcerous or subepidermal infiltration which do not chew through the skin or the mucous membrane, by destruction of these parts, are very rare as a primary disease, though as a secondary disease after long continuance or removal of superficial tumors they are not so uncommon.
op at 1, 285

sic! Wedd
Microscopic characters of Epithelial Cancers.

In examining a morbid growth we have to notice both the cells and the blastema.

I. The cells of different kinds.

(a) Cells called by Paget Epithelial Cancer-cells. He describes them as round, or round-oval, with an outline seldom regular, having a nucleus which is usually single, small, and central. The cells are generally large, from \( \frac{1}{200} \) to \( \frac{1}{200} \) of an inch in diameter, are often prolonged in one direction, or angular. Rokitansky regards these cells as perfectly analogous, both in themselves and in their development, with the epidermideal or greater epithelial cells of the teledated structures.

The mature, older, cells are often of gigantic dimensions, flattened, liable to changes in shape, being sometimes prolonged into processes. They are also liable to a form of fatty degeneration, in which the place of the nucleus is taken by a group of oily-looking molecules, which increase in number and enlarge till the whole cell appears filled.
Sur p. 23

Op. cit. II 437
These cells can be traced through all these changes, though all these gradual steps of development, to be in reality true epithelial cells, altered it is true by some change in the laws which govern their development, which change we in our ignorance of its cause, call degeneracy, but which certainly in the rapid growth in the rapid endogenous mischief, which it causes, there are symptoms of premature decay.

The second element which we find in a microscopic examination of epithelial cancer are free nuclei. These nuclei, Mr. Pape says he could not distinguish from the nuclei of Schirmer's or Medullary cancer. They seem apart from the other cancer structures, and he believes these occur in the greatest abundance in the most acute cases. This last remark is, I conceive, one of the very greatest importance, tending as it does to the inevitable conclusion, that there is no real cure of.
What are Camous Hulies? I admire much their J. Gattalia.
distinction between epithelial growths, and
the (so-called) True Cancers, except as will
afterwards be seen) what depends on differ-
ence of position, vascular supply &c.

Mr. Distoie in some admirable lectures
on Cancerous growths, drew the attention
of his党校 to this circumstance, viz
the striking resemblance between these ep-
ithelial nuclei & true cancer nuclei, and
mentioned that in a case otherwise a
most distinct case of Epithelial Cancer,
no epithelial cells were found, but only nuc-
leii of the striking Cancer nuclei.

The third form consists of Cells called
by Paget blood cells or indigenous cells.
They vary in appearance, but are generally
complex. This is the result of one or more
nuclei enclosed within the cells, which
tend themselves to assume the character
of nucleated cells. Arbitermyshy describes
these cells, and explains them, by considering
their parent cells, within which reach a second
generation of cells, a development indicative
of an alveolar disposition in the other lmr-
sounding elements. This alveolar character we have already seen noticed and brought prominently forward by Virchow, in his paper quoted above.

In another place, Virchow speaks of these large vesicular cavities as reproductive spaces (Binnräume) in which an endogenous nuclear or cell formation goes on. Volle agrees with these observations so far as to consider these vesicular spaces to be nuclei altered in their development but not been able to observe a new formation of nuclei within them, and hence doubts their reproductive character. His negative observations, however, cannot outweigh the united positive observations of Paget, Virchow, and Retzius.

Lebert describes these same structures as very large cells, with a very voluminous nucleus, and which resemble cancer cells in the unwanted development of the nucleolus. Dr. Bennett in a case of 'Cancroid' of the lower lip, figures and describes cells taken from the softened substance covering the ulcer, as having like the preceding...
large omeles, but containing all granules sometimes very much crowded together, instead of, as in the other nucleoli in a state of rapid development. The varying descriptions of what was found in the field of the microscope can all be explained, by the various conditions in which the parts of tumours from which they were taken, were; thus I doubt not, the cells in which rapid cell development with omeles & nucleoli, was going on, were derived from tumours still increasing in size, while again cells taken from the soft putaceous matter at the bottom of an old ulcer would no doubt be found to display disintegration & degeneracy.

Another, and very remarkable cell formation seen in epithelial cancers, are the laminated corpuscles of Payet first I think described by Delbet under the name of globes epidemique. He describes them as void or spheroid bodies, composed of a true concentric arrangement of epidemic cells in such close apposition that these spherules assume almost a fibrous appearance. They are large, often
Neben die Pyramiden, Wien 1819

visible to the naked eye, but generally from 1/200 to 1/100 of an inch in diameter. They contain granular matter, nuclei or cells, which are not distinctly seen till after the addition of Acetic Acid.

The only mode of explaining the formation of these cells is the one brought forward by Vitalianus, in his Essay on Cystic Fornix. Suppose that one of the primary nuclei (we spoke of under the third head) to contain four secondary nuclei, and that one of these secondary nuclei grows out of all proportion to the others; it will compress these others between its own & the cell-wall, and thus invest itself in a capsule, which is apparently laminated. A great complexity of similar events, if may account for the formation of these globes epidemieniques, each of which, as de Bert very naively suggests, may be called 'cellule grandiose' if the name of 'cellule mere' be not thought to be sufficiently descriptive. He regards these globes epidemieniques as pathognomonic of epithelial cancer as he never met with them except in carcinoids of the skin.
tongue or neck of the uterus.

Page considers them very characteristic of though not absolutely peculiar to epithelial cancer; he has met with them in epidermal and sebaceous cysts, and has seen a corresponding mode of formation in the multinucleated cells of myeloid tumours.

Having thus alluded to, as far as can be done in the limits of this essay, the cells which form epithelial growths, we must now notice the stroma in which these cells are arranged. The stroma or connective tissue seems in most cases to be very scanty, almost imperceptible. It liberates the contained cells either under gentle pressure or after acetic acid has been added. It consists of elongated cells with slender nuclei, arranged in bundles and enclosing areolar spaces, which are completely filled with groups of cells. This circumstance of the stroma is one of the chief points of difference, in the structure of epithelial cancer, that of sebaceous.

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Weil op cit. 573.

Rokitańsky op cit. i 286.
or fibros cancer. It cannot however be used as an infallible diagnostic sign to separate epithelial or the so-called true cancers, as in well marked Adenocarcinoma cancer, places are frequently observed where the fibrous stroma has been replaced by flattened cells. Notwithstanding the flattening of the stroma a fibrous structure is often visible in epithelial cancers. This results from a secondary arrangement of the epithelial cells, in cylindrical or faceted forms which unite together into fasciculi.

Having thus briefly gone over the anatomical & microscopic characters of epithelial cancer, it is so far proved I think that the structures we have investigated possess in their anatomical & vital character two at least of the tests of Malignancy already stated — viz. Power of infiltrating tissue and rapid endogenous cell development. And if under the head of Pathology we find that they exhibit without any tendency to heal, and that when removed they are apt to recur either in the
Original situation as in other organs, they may justly be considered cancers of the
epithelia in which they occur—viz. the thin
and mucous membranes.
which it must not bear
Pathology of Epithelial Cancer

And first a few words regarding the general Pathology, before taking up the Special Pathology and treatment of some the more important and interesting varieties.

Several general points to be noticed:

1. Frequency in the respective Sexes.
   In cases in which the parts affected were common to both sexes, the Male sex is found to be most liable, but of 105 such cases, 86 were in men, only 19 in women.

In cases attacking the sexual organs, if cancer of uterus is omitted for the reasons mentioned before, of cervical foot cancers as being a specific cause, the proportion is nearly equal.

The apparently greater predilection of Male than of females to epithelial cancer, may be accounted for, then. It will be found that the great difference is in the number of the cancers of the lower lip and tongue, which are very much more common in the male sex; now in very many of these cases, the disease is referred by the patients themselves, as in most cases, probably finally, to imbibing, especially with a short pipe.
Lebut up at p. 130
Then what Sebeq says on the subject.

"Out of 18 cases of Carcinoid of the lower lip only three were females. Carcinoid is a malady due to genes, but it can be provoked and considerably aggravated by predisposing causes. Phthisis is a predisposing cause of Carcinoid of the penis - also the greater part of the patients operated on for cancer of the lower lip are smokers who for years have smoked short pipes, but there are only occasional cases, and it is not the case, that everyone who has had phthisis at any period of his life, dies of cancer of the penis, or that all smokers of short pipes die of cancer of the lower lip.

2. At what age do these tumours occur.
The most common age is from 60 to 70. That is to say, of a certain number of cases, the largest average will be found in that decade, but if we take the proportion of persons alive at each of the successive periods, we find that the liability to epithelial cancer regularly increases, with increase of age.

The relative frequency at different ages, however, varies with the part of the body which is di-
op. cit. ii. 473

op. cit. p. 658

op. cit. i. p. 460
leased, and in noticing the most common
leaves of the disease we will give the age at
which each is most common.

What is the average duration of life from
the time at which the tumour began?
From 38 cases quoted by Mr. Paget, the
average of about 44 months for each is obtained
but he thinks that about 4 years is probably
the true average duration. This is about the
same average as Sencken has, and a very
much better one than in medullary cancer
in which the average duration is just about 2
years. Lebert gives a bit of 50 which for
an average of about 6½ years, but as he
omitted some cases of cancer of the tongue,
which generally has a much more rapid course
his average must be considered too high.

Age Epithelial Cancers. Heredity ?
Paget has collected several apparently very
clear instances of the hereditary nature of
esophageal cancer, but too much stress
must not be laid upon these, as in each
case the affected persons pursued the same
All mustard grouters less men hunting, someone or life.
employment, and were liable to the same disturbing influences, but in some other ins-
teances, he demonstrated in the most unassal-
able manner, the intimate hereditary connec-
tion which exists between epithelial and so-
called true cancers. In a long series of
cases we see the females of the different
family circles, dying of cancer in the breast
or uterus, while the fathers, uncles or brothers
differ from epithelial cancer of the lip a tergo.
While out of 116 cancer cases interviewed by
himself, one only was aware of any member
of the family having had a simple tumour.

Has epithelial cancer, that tendency
(without doubt, possessed by Sausich and
Encephalioid) to contaminate the constitution,
and appear secondarily in one or more organs
and situations, even after the primary
disease has been excised?

It does not appear to have this tendency
dearly or strongly as the others, but that
in many cases, secondary recurrence takes
place, cannot for a moment be doubted,
for example, take a case in which a
marked cancers approach was justified by finding after death cancers nodules in the heart and liver, the patient having died of widespread epithelial cancer of the lower lip and chin.

We may seek for at least a partial explanation of the very malignant nature of these cancers in their anatomical position; at a distance from — and equally connected with — the great organs of the body, and also from the fact that from their position, their presence is early detected if they are put under treatment early, while yet there is time.

For the consideration of the special pathology and treatment of these growths, the best and clearest way will be, to examine the patients in which they are most common, most interesting and at the same time most amenable to treatment, and under the hand of each to give briefly an account of the special pathology and treatment combined.
Three of the most common, interesting, and practically important seats of the disease are the lip, tongue, and penis, and to these may be added, scrotal, foot, cancers, which is interesting from its frequency in some places, rarity or absence in others; its almost specific cause, and its great obstinacy.

Of the lower lip.
The upper lip is very rarely found to be affected with epithelial cancer, and hardly ever except from extension of the disease from the lower lip. This preference for the lower lip cannot well be explained except from the much greater mobility, hence perhaps, greater exposure to irritation to which the lower lip is subjected. The disease generally begins in the form of a small tubercle in the substance of the skin or membranes or membrane, but is rarely seen by the surgeon in that state, as from its position it is constantly exposed to irritation of the tongue, teeth, and upper lip, and hence liable very soon to ulceration.
Chebury Surgery. (Smith) vol 11. p. 773

Rodent ulcer of Paget
Hawkins. Reddish brown. 1847 p. 78—
Bowie Lectures on Pathology & Surgery.
At first, and sometimes for a considerable time the small ulcer that forms on the top is covered by a scab, which is constantly removed by the irritation and constantly grow again. After a certain time, however, which varies in different cases, this is succeeded by a deep, rough ulcer, with foul discharge which when rubbed off discloses the exuberant papillae already mentioned. The edges of the ulcer appear raised and greatly indurated. This ulceration spreads with greater or less rapidity, unless checked, involving the tissues in its progress, so at last it may destroy skin, mucous membrane, gums, glands and even the bone itself. There are some other ulcers which antedate a microscopic investigation, may be mistaken for true cancer of the lip, such as those occasioned by the presence of bad teeth, Syphilis, etc. One form the differential diagnosis of which is rather difficult is the one described by Mr. Hawkins and Sir Pen. Bardie as the phagedenic ulcer of the face in old persons, a mere briefly the cancerous ulcer. This presents the
Lebest op eet
appearance of a soft tubercle, covered with moist skin, is very slow in its progress, sometimes remaining almost stationary for years, and beginning to ulcerate only when the patient gets old. When it does begin to spread slowly but constantly, but is unlike epithelial cancer, in being strictly local, and showing no tendency to recur after complete removal. On section such a tumour appears firm & solid, or microscopical examination it shows no trace of epithelial or cancerous structures, nor is it ever attended by any disease of the lymphatics.

As regards the eye affected, we have already seen that snakes are much more subject to it, perhaps for the reasons given. Insufficient observations have not been made regarding the duration of this form, but from the statistics of Sebect we find the average duration to be about 3 2/3 years.

The usual age at which it first appears is from 45 to 50. This may help to distinguish it from the 'cancroid' tumours of the face of Sebect, which are really rodent alveus, and which do not usually appear till
about 20 years later in life rarely beginning to be troublesome till past the age of 60. 

If left untouched the ulcer extends both superficially and in depth, an abundant purulent secretion bathes its surface, which surface as the ulcer gets deeper, becomes the seat of frequent haemorrhages. The lymphatic glands adjacent usually become cancerous sooner or later, as the disease is slow or rapid, and exhibit on section the same structure as the tumour of the lip. Soon they too ulcerate, and at this stage, the patient is generally carried off by exhaustion, induced by the foul fetid ulceration, the haemorrhage from the opened vessels, the digestion destroyed by the loss of the saliva, which can no longer be retained; and but rarely from contumaciation of the constitution, or the secondary appearance of cancer in other organs.

The time now to the most important question viz. treatment. Much has been said and written about it, but the question is simply this. Is the tumour, once proved to be

Symes, loco. citation.
Chelms op. cit. vol. ii. p. 774.
Lebet, op. cit. p. 657. 2e. 8e.
Really cancer, to be removed or let alone? Before the tumour has been proved to be cancerous, different plans may be tried to give it a chance of healing, such as silence, rest, removal of all possible causes of irritation. But once proved to be cancer, is it to be removed? and if so, how? The highest surgical authorities are all agreed that the tumour should be removed and that as early and as thoroughly as possible. In a good case, where the glands are intact, the ulcer not very large, and the general health satisfactory, the operation has a fair chance of completely removing the disease, and it has been considered to be one of the most favourable situations as regards the prognosis of the disease.

It is to be feared however that the chances in the patient's favour have been exaggerated by the fact that sometimes syphilitic and other does not malignant are removed and involved as epithelial cancers.

Mr. Paget thinks that a very trivial prolongation of life, is in most cases, gained by removal, but that the operation should be
Prof. Sykes. Clinical lecture.
performed, as there are plenty of cases, in which a very long period of health, and some
since permanent recovery has followed the operation, excision may be performed once or twice in the same
patient as a palliative, and a means of prolonging life, but with little hope of ultimate recovery.

Removal of the tumour ought in all cases to be performed by the knife or
scissors, not by cautery, which are tedious, painful and uncertain.

Modes of Operating

1. When the tumour is not very large and the lips are pretty full, two cuts enclos- ing a V shaped piece of the lip should be made. These cuts should meet at an angle so acute as to admit of accurate apposition of the cut surfaces, which should not be brought together till bleeding has entirely ceased, and should then be secured by several points of twisted silk. Great advantage will be gained by the introduction of a single stitch in the upper part, just where the
Pyrene op cit. p. 434.
Célin. de vol. 7 p. 714.
Skin passes into omolos membrane.

2. When the disease has attacked so much of the lip, as to render the deformity which would result from the V shaped incision (if performed) too great, the plan proposed by Richerand, and recommended by Profr. Syme and Chelles is, to seize the diseased part with catgut forceps, pull it up, and cut it off through the healthy part by a slightly sweeping cut with a pair of curved scissors. This is only admissible in cases where the disease is superficial and yet so extensive as not to admit of the simple V shaped incision. After removal the edges of the skin and omolos membrane should be stitched together.

When the whole of the lip is deeply affected, that the two former plans are impracticable, a cut from either angle of the lip obliquely outwards, may be of use, if in loosening the textures, and enabling them to meet after the extensive removal, a recourse may be had to one of the various cheilo-plastic operations of Salicetius, Von Graefe, Dupuytren, Penz de St.
Contrivitorn to the Pathology & Practice of Surgery p. 296.

Maxim or Dieffenbach. But when these operations are undertaken to remedy a deformity produced by Cancer, the prospects of any ultimate success, must be very unfavourable.

For better than any of these cheiloplastic operations mentioned, is the procedure invented and recommended by Mr. Syme, in which, by cutting outwards and downwards towards the chin, from the angle of the V-shaped incision, however obtuse that may (from the size of the tumour) have to be made, flaps are obtained which on being brought together make a new lip with far less displacement, and hence with a much higher vitality, and better chance of success than by any other method.

Already are many instances of the good results of this operation.

Having thus come over the treatment of Epithelial Cancer of the lip, the pathology and treatment of the other more common forms can be gone over more rapidly.
Leber op. cit. 429.
Epithelial Cancer of the Tongue.

This is one of most painful of all cancerous affections and at the same time one of those most prone to rapid return. Sebrell remarks that cancer of the tongue is remarkable for the large size and rapid endogenous development of its cells, which contain enormous nuclei & quantities of free nucleoli. Here as well as in epithelial cancer of the lip, there are several other kinds of ulceration which imitate the true cancer, such as syphilitic & mercurial ones. Ulcerations dependent on chronic derangements of the digestive organs, and on local irritation as from decayed teeth etc.

All these however will generally yield to treatment constitutional or local. The cancer does not. It generally begins with a hard unremissed swelling, which soon breaks, and spreads into a foul ulcer. The pain is sharp and lancinating.

Once begun the progress of the cancer is rapid. Even if speaking be forbidden, the organ gets no rest, the presence of the
Lehur op cit. p. 432
Wallhe op cit. p. 261

op cit 535

Med Chile Transact. Vol XIV p. 246

op cit p. 434.
and ulcer irritates it, renders expectoration necessary, and every movement aggravates the disease.

Left to itself the usual duration of the disease is from a year to 15 months, and constitutional poisoning is manifested to a very intense degree. There are differences of opinion with regard to the sex and age usually attacked by this disease. Mr. Syme says that it occurs at an advanced period of life and is more frequent in females than in males. Mr. Leaner says that strong healthy males from 40 and upwards are most usually subject to it. Robertson fixes the average age at about 47. But cases are on record in which it appeared at a much earlier age.

It may cause death in various ways. By opening the larynx arteries it may produce haemorrhages and death of the heart; by spreading backwards to the soft palate and tongue it may suffocate — by obstructing the function of(?) and deglutition it may starve the patient. The only remedy when the
op. cit. 437
op. cit. p. 135.
first attempts to check the progress of the ulceration have had a fair trial, and proved futile in extirpation of the disease. But this fails, Travers has seen but one case, where it did not return within the year. Sebest says, 'The operation can only interrupt without arresting the progress of the disease.' Syme says, 'The result of experience forbids almost any hope of effecting permanent relief by extirpation.' And why? Because the disease has not been removed. In the whole muscular tissue of the organ vascular system rapidly becomes infiltrated with the cancer nuclei, and, remove the affected part as you like, by ligature, caustic, or knife, while there is a fibro of the organ left the disease will return in that fibro.

Different methods have been proposed for the removal of the diseased part, of these the knife or scissors seem to be preferable to ligature, which is painful and uncertain and the objection raised against the use of the knife viz. that the haemorrhage is uncontrorollable is untenable except in some cases when the diseased part extend very far.
Bulletino delle Scienze Mediche 1839.
back. Many methods have been tried to render the removal as complete as possible. Thus, Regnoli cut from below the clivus, dividing the diseased and myeloid tissues, and applied ligatures near the root. This plan was tried by Arnott in this country, at the least temporary success, but even in his case the gland was not completely removed.

The only operation which gives any reasonable hope of remission of the disease is the one which has been twice in this city performed by Mr. Syne — because it alone completely eliminates the disease or perhaps rather the local manifestation of the disease. The two cases have proved fatal, not from the shock of the operation, but from haemorrhage. Not from suffocation from the absence of the tongue in deglutition, but from causes which must have produced a fatal result after any operation of any importance — A third case in a climate more equable, perhaps in a patient of more temperate habits and better constitution, has proved successful, and after nearly 7 months no return of the disease has appeared.
It is a dangerous operation but is not the
disease, for the relief of which it is attempted.
certain death, and that a most painful
one? It is a last resource but when other
hope has failed, is not a last resource even
to be welcomed. — An amputation at the
hipjoint a forbidden operation, though only
the in every true outrode it?
Chelms op cit vol ii 807
Vulval Cancer of the Penis.

This usually affects the preputial border of the glans, or the inner fold of the prepuce. Caesarean parturition, cases in which the prepuce is long and difficult of retraction, are more liable to this disease than others. It is often difficult to distinguish cases of a syphilitic origin from cancer.

From statistics we find that this is not nearly so common a disease, as cancer of the lip. The average age at which it usually appears may perhaps be a few years earlier than when cancer of the lip appears, but sufficient data are still required.

Treatment is on the same principle, as the others, i.e., removal, if the glands in the region of the testicles or inguinal glands are not affected. Removal of the prepuce may in some cases suffice, when it alone is affected, but this is very rarely the case.

Amputation should be performed at one stroke by a long knife. No flaps are necessary, as the skin is rather apt to prove redundant. The prognosis is not favourable as there is great risk of return even when the disease
appears to be thoroughly removed.

Cancer of the Scrotum or Chancery scrota.

Cancer. This is a very remarkable form of disease, and though the great authority of Dr. Paget puts it in the class of epithelial cancers, there might be some variety of opinion regarding its true pathological position.

There are many points in this strange disease quite unexplained. Thus it apparently depends upon a specific cause, the frequent contact of dust with the skin. Yet how is it that this result follows only in certain parts of the country, while in others the same contact produces no such effect? And how is it that coal-dust is quite innocuous? Miners do not suffer from this disease. It is unknown in France and the North of Germany, but this may be explained by the different sort of deposit left in the chimney by a woodfire, but in Scotland where coal is much used, this disease is hardly ever seen. Indeed it is principally confined to London and some other large towns in England. There are anomalies not easy
Travels op. cit. p. 345.

of explanation. The situation generally attached by the disease may be explained by the fact, that the corrugations of the thin skin of the foot tend to confine the root, and thus render its removal very difficult, and thus its continual contact irritating and obstructing the sebaceous follicles of the part, induces a state of the skin, peculiarly liable to the attacks of epithelial cancer, in those who have any such predisposition.

The disease generally begins by a hard, primple which suppurates, leaks over, is scratched and irritated, and soon results in a superficial ulcer with hard eroded edges. Though by destroying the skin & cellular tissue it may have — it does not involve the testicle until a pretty late period in the disease.

The inguinal glands are frequently affected and enlarged, but this enlargement often subsides on the removal of the diseased portion. Though unfortunately this is not always the case, and often the disease spreads to and involves the inguinal glands, forming a foul ulcer.
The usual age at which this disease comes on is between 30 and 40 very rarely under 20. It is almost strictly confined to the forearm. Earle mentions a case in which it occurred on the wrist of a gardener who was employed in distributing dust to destroy blight. Sir Astley Cooper saw it twice on the cheek.

The only treatment is removal of the diseased parts by the knife. A permanent cure may sometimes be affected if removed sufficiently early before the glands become tainted. It is of course requisite for any chance of permanent advantage, that the patient should relinquish the deleterious occupation.
There are many other situations attached by epithelial cancers, but the ones already noticed will I trust be sufficient to prove

1. That epithelial growths, which under the microscope give evidence of rapid endogenous cell development — in which the tissues of the part are infiltrated, and crowded with such cells — which go on to unhealthy ulceration without any reparative tendency — differ as regards practice in no essential particular from the true cancers, except in such points as depend merely on the situation in which they are found — that their prognosis is unfavorable — and that their treatment, when it is possible, should be immediate extirpation.

2. That the fact (which is now regarded, as ascertained) that epithelial growths present the character of malignancy in a less degree from that do the true cancers can be explained without the admission of any essential difference between them in anatomical or pathological structure.
In (a) Cancer of the Skull or on the mucous membrane has not the same intimate connection with great lymphatics as, e.g., Sarcoma of the breast has. (b) Being far removed from the great nervous, circulatory, and respiratory organs, they do not by their position or pressure exercise the same harmful influence as, e.g., Sarcoma of the bronchial glands does. (c) That being in an early stage visible and often accessible, they can be often removed and that early, which is of the most vital importance, as the only chance of cure.

Joseph Bell.