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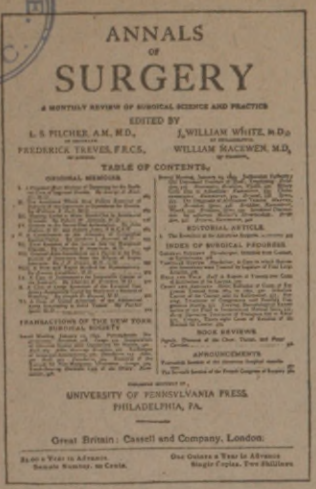

ANNALS
OF
SURGERY

A MONTHLY REVIEW OF SURGICAL SCIENCE AND PRACTICE

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OPERATIVE PROCEDURES IN ADVANCED AGE, BASED ON A STUDY OF SIXTY-FIVE CASES AGED SEVENTY OR MORE.

By CHARLES L. GIBSON, M.D.,

OF NEW YORK.

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OPERATIVE PROCEDURES IN ADVANCED AGE, BASED ON A STUDY OF SIXTY-FIVE CASES AGED SEVENTY OR MORE.

By CHARLES L. GIBSON, M.D.,

OF NEW YORK.

DURING my interneship at St. Luke's Hospital, New York city, I saw a rather unusual number of operations on persons of advanced age. The results were a matter of great interest to me, and I have made an investigation of the subject in order to obtain some facts to guide us in these cases. In my statistics I have selected the biblical limit of life, three score and ten, as the minimum figure representing advanced age. Naturally, the number of such cases is small. Such operations as are undertaken are for a large part imperative, being demanded for the immediate prolongation of life, and, therefore, attended with great gravity.

A search through the records of St. Luke's for the last thirty-three years gives sixty-five cases, with a mortality of sixteen, or 24.5 per cent. It must be remembered that statistics covering so long a period must include a number of fatalities of the pre-antiseptic era, which to-day practically never occur.

In the following tables the question of the mortality and its nature will form the chief inquiry. It would be very interesting to study many things, such as the progress of repair, methods and duration of treatment, urinary analysis and far-reaching results; but such statistics, based on so limited a number of cases, of such varying nature, and derived from records covering so long a period, would be worthless. The following table will indicate the general character of the material:

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Age.

The average age was 73 years, 10 months.

The oldest person was 87.

The average age of the fatal cases was 73 years, 5 months.

The oldest fatal case was 78 years.

Sex.

There were 49 males and 16 females.

The male sex furnished 75.5 per cent., the female 24.5 per cent. of the total cases.

The male sex furnished 81.25 per. cent., the female 18.75 per cent. of the mortality.

The death rate among the female cases is slightly lower than among the male; this difference is not sufficiently important to draw any conclusions.

Anæsthetics.

Ether, fifty-seven times.

Cocaine, four times.

No anæsthesia, nine times.

No record, three times (probably none used).

Mortality.

Cause of Death—	Hæmorrhage and shock,	1
" "	Secondary hæmorrhage,	1
" "	Shock,	1
" "	Pyæmia,	2
" "	Peritonitis,	2
" "	Pneumonia,	1
" "	Uræmia,	8
	Total,	16

Mortality by Decades.

1860–1870.	2 cases with	1 death,	50	per cent.
1870–1880.	12 "	6 "	50	"
1880–1890.	27 "	4 "	14.8	"
1890– .	24 "	5 "	20.8	"

The period 1880–90 furnished the largest number of cases, with the lowest death rate.

Uræmia, therefore, was the cause of 50 per cent. of the total mortality. Death from uræmia occurred not earlier than the eleventh day, and not later than the thirty-second; the average was the fifteenth day, a date of some prognostic importance. It is interesting as well as remarkable that there was only one death from pure shock. This case (No. 2) was almost moribund at the time of operation. The detailed table shows many capital operations, and this absence of shock is most encouraging.

The five cases of death under the headings secondary hæmorrhage, pyæmia and peritonitis, are accidents of the pre-antiseptic period, and would not to-day have to be considered.

There were seventeen cases of operation on the bladder and urethra with eight deaths, of these six were from uræmia.

Perineal cystotomy,	2	cases with	1	death.
Supra-pubic cystotomy,	1	" "	1	"
Supra-pubic lithotomy,	8	" "	3	"
Internal and external urethrotomy,	4	" "	3	"
Lithotrity,	1	" "	0	"
Litholapaxy,	1	" "	0	"

The above class representing 25 per cent. of all the cases gave 43.75 per cent. of the total mortality.

Two strangulated femoral herniæ died respectively from uræmia and shock. One simple femoral and one incarcerated inguinal hernia were cured.

For removal of malignant tumors, nineteen cases with three deaths: 18.75 per cent. of total mortality.

Operations on rectum and anus: four for fistula, three for hæmorrhoids.

A death from peritonitis followed Allingham's operation. From a critical study of the accompanying tables it seems to me that operations on persons of advanced age present a less gloomy outlook than the actual mortality, 24.5 per cent., would indicate.

We have reason to believe that our modern methods will be productive of a much smaller death rate. These methods not only banish death from infection, but also markedly shorten the time

of wound healing. Divided surfaces are now approximated where they were formerly left to granulate. Mischievous and useless drainage tubes no longer leave indolent sinuses which persistently refuse to throw out granulations. Nature is called upon to furnish a minimum of new tissue. The duration of rest in bed is markedly shortened by the favorable progress of wounds, as also by the modern stiff dressings which allow of considerable activity during the convalescence. The latter fact is of cardinal importance and on it depends often the recovery or death of old people. They are generally much depressed by confinement to bed; when they settle into a condition of helplessness and prostration, they must be promptly stimulated by getting them out of bed and changing their immediate surroundings. Some risks in doing so are justifiable, as the other condition is fatal. In the case of an old man of eighty-one, castrated for tubercular epididymitis, there was more or less shock after operation, followed by apathy, weak and irregular pulse and refusal of food. The condition seemed desperate; but on the third day I began getting him out of bed into a steamer chair with a result that was almost magical, and now, two years later, this patient is a surprisingly vigorous, well-preserved, old gentleman.

Infrequent dressings, another advantage of the perfected aseptic methods, are of great value in removing depression from pain and apprehension of pain. Many wounds should require no other dressing than that applied directly on the operating table. On its removal in one to two weeks, all local treatment comes to an end.

Iodoform has been found especially deleterious in advanced age; where there is no actual suppuration it should give way to dressings sterilized by heat alone. I feel certain that the vague complex of symptoms, known as iodoform poisoning, has often been ascribed to uræmia. The two conditions may accompany or mask each other.

What resources have we against uræmia, which the foregoing tables show is responsible for 50 per cent. of the fatal cases? Our resources would appear very limited, for we are dealing generally with long-standing and desperate conditions, especially in the genito-urinary cases. Forewarned, however, is forearmed.

Our investigations, both clinical and chemical, of the condition of the kidneys must be unusually searching. The chemical and the microscopical investigations have been developed with so much minuteness and precision, that we may forget the very valuable hints which close clinical observation may give us. A characteristic pale, pasty countenance, a persistently contracted pupil, marked arterial tension, unexplainable gastric irritability, a very dry skin, are signs which should make us suspicious even in the presence of negative urinary examinations. It has been my experience that occasionally the clinical evidences are confirmed only at a later period by the laboratory examination. Again the laboratory evidence may not be in direct proportion with the severity of the symptoms. Or the examination may be misleading from predominance of certain constituents, mucus, pus or blood.

We must put the patient in the best possible condition before operation. The kidneys are to be relieved of all unnecessary work. The skin must supplement the kidneys' work, and due care taken of its condition. In short, we should resort to all those judicious therapeutical measures that prove of value in such conditions.

The tables show that ether was used exclusively for general anæsthesia. The question arises whether ether, which has an especially bad effect on damaged kidneys, could not have been replaced to some advantage by chloroform? Would such use of chloroform diminish the uræmia mortality without raising the mortality from shock? I cannot answer, my personal experience with chloroform in such cases being *nil*. I cannot help feeling that given a case of badly damaged kidneys chloroform will give us better results. The action of chloroform is certainly tragic. When it acts badly it does so brusquely, scoring a death on the operating table, while ether contents itself with the insidious, but fatal uræmia.

Since writing the above I have seen an article by Blum,[1] giving the results of operations on fourteen cases, seventy and upward. There was but one death, but general anæsthesia was employed only three times. The procedures were for the most part minor operations.

[1] Archives Gen. de Medicine, July, 1892.

Details of Cases Analyzed.

Case	Year.	Age.	Sex.	Condition.	Operation.	Anæsthetic.	Result.
1	1861	74	F	Epithelioma of tongue.	Amputation of tongue.	Ether.	Cured.
2	1868	70	M	Strangulated femoral hernia.	Herniotomy. Artificial anus.	"	Died of shock.
3	1872	73	M	Fistula in ano.	Incision.	"	" " uræmia.
4	1873	72	M	Vesical calculus.	Lithortity in eight sittings.	None.	Cured.
5	1874	74	F	Hæmorrhoids.	Allingham's operation.	Ether.	Died of peritonitis twenty days later.
6	1874	74	M	Epithelioma of tongue.	Galvano-caustic excision and section of gustatory nerve.	"	Died of secondary hæmorrhage seventy-five hours later.
7	1875	74	M	Rodent ulcer of hand.	Amputation of forearm.	"	Died of pyæmia nineteen days later.
8	1875	75	M	Gangrene of leg.	" " mid-thigh.	"	Died of pyæmia.
9	1876	73	F	Epithelioma of vulva.	Excision.	"	Cured.
10	1877	78	M	Strictures of urethra, and infiltration of urine.	Internal and external urethrotomy.	"	Died of uræmia twelve days later.
11	1878	71	M	Epithelioma of hand.	Amputation of forearm.	"	Cured.
12	1878	74	F	I. Epithelioma of vulva. II. Abscess of groin.	I. Excision. II. Incision.	"	*Good recovery. Died eight months later of various complications.
13	1879	70	M	Cancer of lip.	Excision and plastic.	"	Cured.
14	1879	76	M	Caries of metatarsus.	Excision metatarso-phalangeal joint.	"	"
15	1880	79	M	Fistula in ano.	Incision.	Not recorded.	"
16	1880	75	M	Strictures of urethra. Chron. diff. nephritis.	Internal and external urethrotomy.	Ether.	Died thirty-two days later of uræmia.
17	1881	72	F	Necrosis of finger.	Amputation of finger.	"	Cured.
18	1882	78	M	Old arthritis of knee with deformity.	" at knee.	"	"
19	1882	87	F	Epithelioma of face.	Excision and plastic.	"	" (erysip. two days later.)
20	1882	81	M	Double hydrocele.	Both tapped and injected with ℥j. 95 per cent. acid carbol.	"	"

* Case 12, which died eight months after operation from causes not in relation to the operation, is not included in the mortality statistics.

CASE.	YEAR.	AGE.	SEX.	CONDITION.	OPERATION.	ANÆSTHETIC.	RESULT.
21	1882	73	M	Hæmorrhoids and prolapse of rectum.	Allingham's operation.	Ether.	Cured.
22	1884	75	F	Carcinoma of face.	Excision.	"	"
23	1885	72	M	Ulcers of leg.	Nussbaum's operation.	"	"
24	1885	73	M	Hydrocele.	Tapping and injection tr. iodine.	None.	"
25	1885	71	M	Strictures and fistulæ of urethra.	Internal and external urethrotomy.	Ether.	Died of uræmia sixteen days later.
26	1885	77	F	Biliary calculi and empyema of gall bladder.	I. Incision of abscess. II. Laparotomy.	" (twice).	Died of peritonitis.
27	1885	70	M	Caries of carpus.	Amputation of forearm.	"	Cured.
28	1885	75	M	Sebaceous cysts (three).	Excision.	Cocaine.	"
29	1886	79	F	Recurrent sarcoma of face.	Excision.	Ether.	"
30	1886	70	F	Femoral hernia.	Herniotomy.	"	"
31	1886	70	M	Hydrocele.	Tapping and injection ℥j. ac. carbol, 95 per cent.	No record.	"
32	1887	74	M	Vesical calculi.	Supra-pubic lithotomy.	Ether.	"
33	1888	81	M	Epithelioma of lip.	I. Extirpation. II. Plastic, fourteen days later.	" (twice).	"
34	1888	70	M	" " "	Extirpation and plastic.	"	"
35	1888	73	M	Vesical calculus.	Supra-pubic lithotomy.	"	"
36	1888	70	M	Renal "	" " cystotomy.	"	Died thirteen days later of uræmia.
37	1888	79	M	Recurrent epithelioma of neck.	Excision.	"	Cured.
38	1889	87	F	Cataract.	"	Cocaine.	"
39	1889	74	M	Suppurative orchitis.	Incision and drainage.	Not recorded.	"
40	1889	74	M	Multiple sebaceous cysts of scalp.	Excision.	Ether.	"
41	1889	74	M	Internal hæmorrhoids.	Whitehead's operation.	"	"
42	1890	73	M	Vesical calculi.	Litholapaxy.	"	"
43	1890	71	M	Abscess of foot.	Incision.	Cocaine.	"
44	1890	75	M	Vesical calculus. Chron. diff. nephritis.	Supra-pubic lithotomy.	Ether.	Died eleven days later of uræmia.
45	1890	76	F	Cyst of face.	Excision.	"	Cured.

Case.	Year.	Age.	Sex.	Condition.	Operation.	Anæsthetic.	Result.
46	1890	71	M	Chronic cystitis.	Supra-pubic cystotomy and drainage.	Ether.	Remained in hospital three mos. after operation. Unimproved.
47	1890	74	M	Vesical calculus.	Supra-pubic lithotomy.	"	Cured.
48	1890	70	M	Vesical calculus.	Supra-pubic lithotomy.	"	Died eleven days after operation of uræmia.
49	1891	81	M	Epithelioma of tongue.	Amputation of tongue.	"	Cured.
50	1891	72	M	Urethral stricture. Chronic cystitis.	Internal and external urethrotomy.	"	"
51	1891	79	M	Epithelioma of cheek.	Excision and plastic. Secondary hæmorrhage.	"	"
52	1891	70	M	Blind internal fistula.	Incision.	"	"
53	1891	73	M	Vesical calculus. Chron. diff. nephritis.	Supra-pubic lithotomy.	"	"
54	1891	72	M	Chronic cystitis.	Perineal cystotomy.	"	"
55	1891	75	M	Vesical calculus. Chron. diff. nephritis.	Supra-pubic lithotomy.	"	Died twenty-six days after operation of lobar pneumonia.
56	1891	75	M	Incarcerated inguinal hernia.	Herniotomy (closed).	"	Cured.
57	1891	82	M	Vesical calculus.	Supra-pubic lithotomy.	"	"
58	1891	72	M	I. Recurrent carcinoma of mouth. II. Double Dupuytren's contraction.	I. Excision. II. Liberation of bands.	"	"
59	1891	72	F	Strangulated femoral hernia. Chron. diff. nephritis.	Herniotomy.	"	Died eleven days after operation of uræmia.
60	1891	72	M	Carcinoma floor of mouth.	Excision.	"	Cured.
61	1892	72	F	Recurrence of carcinoma of breast. Chron. diff. nephritis.	"	"	"
62	1892	76	F	Epithelioma of leg.	"	Cocaine.	"
63	1892	72	M	Recurrent carcinoma of lip. Chron. diff. nephritis.	Excision with submaxillary glands. Uncontrollable hæmorrhage.	Ether.	Died of hæmorrhage and shock.
64	1892	70	F	Lipoma of neck.	Excision.	"	Cured.
65	1892	73	M	Fistula in ano.	Incision and curetting.	"	"