are reported. The primary tumor, the early generations of subcutaneous transplants, and the pulmonary metastases arising from them consisted of malignant osteoblasts, osteoid tissue, and true bone. The early generations of transplants were characterized by a moderate growth rate and the possession of a high alkaline phosphatase activity. With a rapid increase in growth rate in later generations, the high alkaline phosphatase activity and the capacity of forming osteoid tissue characteristic of the early generations were either inhibited or lost. Coincident with the increase in growth rate, early metastases to regional lymph nodes as well as to the lungs were noted. The significance of these observations as they relate to the question of the cell of origin in osteogenic sarcoma is discussed.—Authors’ summary.


Seventy-nine mice provided 103 adamantoblastomas for study. The growths were cystic or solid or both. They originated in the embryonal cells comprising the outer epithelial layer of the enamel organ. Infiltration of surrounding tissues (bone, muscle, lymphatics) was frequently observed in the types of adamantoblastoma that contained solid epithelial masses, and metastases to the submaxillary lymph nodes were found in 2 cases. Forty-nine figures illustrate the character and origin of the growth and stages in its development.—J. G. K.

Clinical and Pathological Studies

Radiation—Diagnosis and Therapy


Studies of the distribution of radiation about x-ray tubes at various kv.p. and with various factors were made. It was concluded that tubes used for therapy should not be used for radiography because of changes in intensity pattern due to roughening of the target. The target angle of a superficial therapy tube should be at least 30°. A curved or convex target face effects an improvement in field distribution.—R. E. S.


The paper includes a general discussion of the various modes of treatment available and an evaluation of the technic to be applied, depending on the stage of the disease. It is concluded that all patients with operable tumors (Groups I and II—Portmann’s classification) should receive preoperative irradiation followed 6 to 8 weeks later by radical mastectomy. The Group III cases (inoperable) should be treated by irradiation, but subsequent surgical measures should be used with extreme discretion. Local recurrences and distant metastases, especially those involving the skeleton, respond relatively well, at least temporarily, to radiation therapy.—A.C.


Survival rates of large series of patients treated at the Mayo Clinic for cancer of the cervix and of the uterine fundus are analyzed according to stage, and to grade of malignancy. It is concluded that the extent of the primary lesion is the most valuable prognostic factor. Broder’s index of grade of malignant change is helpful when rather standardized methods of treatment are employed, but is less useful when individualized therapy is used.—E. H. Q.


Attention is called to the possibility of confusing a single metastatic lymphosarcoma in the stomach with a primary lymphosarcoma or carcinoma of that organ. The prognosis in the 3 cases would be very different.—E. H. Q.


The technic of treating superficial malignant lesions about the eye with radiation therapy is described.—E. C. R.

The authors conclude, after a study of 36 carefully selected patients with early carcinoma of the cervix treated by panhysterectomy, that this is an unsatisfactory method of therapy. Irradiation is the treatment of choice.—M. E. H.


The betatron is a new apparatus for accelerating electrons, which is now in operation at the University of Illinois. The electrons are injected into a doughnut-shaped vacuum tube that is surrounded by an electromagnet producing an alternating magnetic field. The electrons are injected when the magnetic field is small and make circular orbits as the magnetic field increases in intensity.

The electrons receive an acceleration with each turn, and when the magnetic field reaches its maximum intensity, the speed approaches that of light and corresponds to an energy ranging from 10 to 50 million volts according to the design and setting of the apparatus. With very careful shaping of the pole pieces, the stream of electrons is held within a circle and then directed toward a window at the time of maximum intensity of the magnetic field. The betatron may be looked on as a transformer, the secondary of which consists of these electrons, and the number of turns is the number of circular trips made by them. The electrons may be used as such, or they may hit a target located at the window and their energy be transformed into X-rays. If the electromagnetic field has 60 cycles per second, there are 60 streams of electrons giving, for practical purposes, a steady flow. An output of as great as 50 r per minute at 70 cm. distance has already been obtained. A 100-million volt betatron has been designed.—R. E. S.


The betatron is not yet ready for practical use, but measurements indicate its possible applications in therapy. The primary electrons may be used as such, or their energy may be transformed into very penetrating X-rays that give the secondary electrons, the range of which is several centimeters. Original electrons used from the 20-million-volt betatron penetrate 10 cm. in the body and no farther. Maximum ionization should be obtained at 7 to 8 cm. If X-ray is used the maximum of ionization is several centimeters beneath the skin, and the depth of this maximum increases with the voltage, thus giving the possibility of elective depth of maximum ionization. This maximum is several times greater than the surface dose. There is a possibility of giving very high doses to a deeply located tumor without damaging the skin, by regulating the depth of maximum ionization according to the depth of the tumor. The depth dose curves were taken at 5, 10, 15, and 20-million-volt X-rays. One point must not be forgotten, i.e., that the exit dose is greater than the entrance dose, and the skin could be damaged if this is not taken into consideration.—R. E. S.


The treatment recommended is based on the technic developed at the Curie Foundation, Paris, and at the Memorial Hospital, New York. One hundred and thirty-five cases were studied, and the conclusions are based on 67 cases of primary carcinoma of the cervix, selected for analysis. It is stated that this type of cancer should be treated by radiotherapeutic methods without previous surgical intervention and with as little manipulative trauma as possible. The technic consists in intensive roentgen irradiation (60 or more treatments in the course of 35 to 40 days) followed by a short period of radium application, amounting to a total of 100 to 6,000 mgm. hours. Fifty per cent of the patients are living normal lives 5 years after treatment. The results appear superior to those obtained by earlier methods.—A. C.


In order to spare the intestinal tract and increase irradiation to the pelvic tissues, Santé produces a pneumoperitoneum during the course of external irradiation for carcinoma of the cervix. One refill is usually necessary during the treatment. Radium is given by the usual technic. Too short a time has elapsed to permit an evaluation of results. In the discussion of this paper Dr. Stone points out that the depth dose is decreased by the introduction of air.—R. E. S.


For intravaginal therapy Wasson uses cylinders of various sizes and checks positioning with the periscope. The cylinder is placed in 5 different positions in the vaginal canal in rotation to give uniform distribution of radiation. One hundred and forty or 200 kilovolts are used depending on the size of the patient. No information concerning results is available as yet.—R. E. S.

Eye


Report of a case.—E. C. R.


Forty-one specimens of malignant melanoma were examined histologically. It was found that the survival time of the patient cannot been gauged accurately from the histologic characteristics or reticulin content of the tumor.—E. C. R.


A case of retinoblastoma in a 3 year old child is reported, and a discussion relating to nomenclature, pathology, symptomatology, diagnosis, and treatment is presented.—C. J. M.
Primary Carcinoma of the Lacrimal Punctum. 


The common tumors of the eyelids are listed as chalazion, nevus, melanoma, warts, squamous and basal cell carcinoma, and xanthoma. Carcinoma of the lacrimal punctum is believed to be very rare. A small tumor, 4 x 3 mm., was removed from this region in a 50 year old male. The only symptom had been epiphora. Normal function of the lacrimal system was restored after resection and x-ray therapy.—E. E. S.

FEMALE GENITAL TRACT

The Brenner Tumour of the Ovary. 


Diagnosis in all cases of Brenner tumor depends upon microscopic examination. The characteristic feature is the presence of epithelial cell nests surrounded by variable amounts of condensed fibromatous stroma. The paper includes the report of a case that was treated surgically.—A. C.

A Method of Obtaining Endometrial Smears for Study of Their Cellular Content. 


Description of the apparatus and technique developed for obtaining endometrial and endocervical secretions for study as described by Papanicolaou and Marchetti (Am. J. Obst. & Gynec., 46:421-424. 1943).—A. K.

The Management of the Cervix in the Treatment of Fibromyoma of the Uterus. 


A general discussion, with 5 illustrative case histories.—J. L. M.

Carcinoma of the Vulva and Vagina in Infancy. 


This is a report of a case of carcinoma of the vulva in an infant, who is, perhaps the youngest recorded patient with this disease. Signs of the condition appeared when the child was 5 months of age; a visible external lesion was present at 16 months; microscopic diagnosis was made at 21 months, the lesion being recorded as a grade 4 adenocarcinoma. Radiation and x-ray treatment were used, but death occurred when the child was 3 years old, after metastasis had developed in the lungs.—A. K.

Mesonephroma of the Ovary. 


A case report. A malignant ovarian tumor classified as a mesonephroma is described. The term "mesonephroma" was applied by Schiller to certain types of ovarian tumors differentiated from the ordinary capillary cystic types. The tumor was believed to arise from a portion of the embryonic mesonephros incorporated in the ovary. The authors mention the arguments concerning the histogenesis of the tumor.—A. K.

Hypernephroma of the Ovary. 


A case is reported of ovarian tumor believed to be secondary to a renal hypernephroma removed surgically 11 years before. Ovarian metastases of hypernephromas are said to be rare, and this constitutes the third, or possibly the fourth, case on record.—A. K.

Theca Cell Tumor of the Ovary and Carcinoma of the Endometrium. 


A case report. Adenocarcinoma of the endometrium and uterine fibromyomas were found associated with a theca cell tumor of the ovary. Theca cell tumors elaborate an estrogenic hormone causing hyperplasia of the endometrium. Under continuous estrogenic stimulation malignant transformation of the hyperplastic endometrium is possible. The author feels that in this case there was a causal relationship between the ovarian tumor and the endometrial carcinoma.—A. K.

Superficial Noninvasive Intraepithelial Tumors of the Cervix. 


Seventeen cases of superficial epithelioma of the cervix are reported. The author feels that non-invasive epithelial tumors of the cervix occur more frequently than is generally supposed; they develop more slowly and seem to be less malignant than the obvious epitheliomas. Treatment should be just as vigorous for the superficial, as for the infiltrative type.—A. K.

Bowen's Disease of the Vulva. 


A report of 6 cases. The author feels that Bowen's disease is a specific entity, namely, a superficial, noninvasive, intraepithelial epithelioma characterized by chronicity, pruritis, and a distinctive gross and microscopic appearance. It is primarily a skin disease; when it involves mucosal surfaces it shows more malignant tendencies than it does otherwise. The treatment of choice is local wide excision.—A. K.

A Consideration of Certain Factors Pertaining to the Control of Carcinoma of the Cervix. 


The subject of carcinoma of the cervix is briefly reviewed with the conclusions that the 5 year cure rate provides no cause for satisfaction with present methods of treatment. Either radiation therapy is not an adequate form of treatment or it is not being used to best advantage. So far the results of lay education concerning this type of cancer have been disappointing. Further education, especially with the use of films, is advocated.—A. K.

The Use of Endocervical and Endometrial Smears in the Diagnosis of Cancer and of Other Conditions of the Uterus. 


Compared with the vaginal smear, the uterine smear shows a larger number and a greater variety of endometrial and cervical cells. Diagnosis of cancer of the fundus as well as of the cervix is thus greatly facilitated. In the uterine smear, certain cytological features are better shown; also endometrial cells can be obtained in the absence of bleeding, whereas in the vaginal smear endometrial cells are seen chiefly during the menstrual flow. The vaginal....
smear has the advantage of simplicity and facility in routine application, whereas in the case of the endometrial smear there are many contraindications, especially those of infection or pregnancy.—A. K.


A study of 17 cases forms the basis of the following conclusions: There is no hypertrophy of the smooth muscle fibers or hyperplasia of the connective tissue stroma within fibroids during pregnancy. Fifty per cent to 75% of fibroids show degenerative changes during this period, probably as a result of inadequate blood supply. Edema on the basis of severe degenerative changes could explain the enlargement of fibroids during pregnancy; such enlargement should be accompanied by symptoms. Any suspected enlargement of asymptomatic fibroids during pregnancy is only apparent.—A. K.


The cases of carcinoma of the cervix treated at Jefferson Medical College Hospital from 1921 to 1937 were analyzed with respect to management, treatment, and end results. A total of 310 patients were seen, and 292 were treated. Ninety-eight per cent were traced in the follow-up study. The absolute salvage rate was 14.3%; the relative salvage rate, including patients who died after 5 years, was 23.8%. Carcinoma of the cervical stump was encountered in 5.1% of patients; of these, 50% survived 5 years or more. Only 1.6% had had previous irradiation for benign conditions. Present treatment consists of transluminal x-ray therapy in conjunction with preliminary external radiation and the local use of radium.—R. E. S.


In a historical review, the author traces briefly the development of treatment of carcinoma of the cervix from the earliest methods on record to the present day. He then suggests the possibility of a vaginal hysterectomy at the end of the child-bearing period as a prophylactic measure.—R. E. S.

**Male Genital Tract**


The rationale of orchidectomy in the treatment of carcinoma of the prostate is discussed, and the results of a series of 23 cases of subcapsular orchidectomy are reported. The technic of subcapsular orchidectomy is described and illustrated. There were no operative deaths. Undesirable results include complete loss in sexual power in all cases and hot flashes in a few. The hot flashes may sometimes be relieved by the administration of stilbestrol.—I. L. M.


For the 5 year period from 1937 to 1942 the diagnosis of carcinoma of the prostate was made in 358 cases. Seventy-three patients (20.2%) submitted to radical operations. Among them, there were 4 hospital deaths, a mortality of 5.5%. Of 43 patients for whom the prognosis was good, 41 are living and well without evidence of recurrence or metastasis. Of 26 patients for whom the prognosis was poor, 8 are living and well at intervals varying from 3 months to 5 years.—M. E. H.


Surgical treatment of benign prostatic hyperplasia is undertaken in an effort to relieve the symptoms of urinary obstruction. The performance of suprapubic or simple perineal prostatectomy does not preclude the subsequent development of prostatic carcinoma or recurrent prostatic hyperplasia. Radical prostatectomy, in which the entire prostate gland, a portion of the urethra, a cuff of the bladder, both seminal vesicles, and 5 cm. of each vas deferens are removed, is employed exclusively in cases of prostatic carcinoma and is applied with hope of cure in only about 3% of cases. Although by suprapubic or simple perineal prostatectomy an undetected carcinoma within an adenoma may be removed, a happy outcome is infrequent. More frequently the lesion has spread to the perineal lymphatic vessels, and then cure by any of the 3 methods outlined for the relief of symptoms due to prostatic hyperplasia is impossible.—M. E. H.


The successful removal of a carcinoma of the prostate in a 62 year old patient was followed by persistent discomfort in the region of the rectum and by a pronounced feeling of fatigue. Fifteen months after operation stilbestrol therapy (5 mgm. daily) was instituted. After about a year of treatment (total amount of stilbestrol, 1,000 mgm.) the patient had gained weight, his ability to work had been restored, and the local symptoms had disappeared. The prostate was smaller and more regular in shape, giving the impression of a normal gland. A biopsy performed at the time of the report showed that carcinoma cells were still present, but the general microscopic picture was suggestive of involution of the neoplastic elements.—A. C.


Cancer of the prostate has been found in approximately 1 out of every 7 men more than 50 years of age. There are no symptoms of early prostatic carcinoma. A careful digital palpation of the prostate should be part of the physical examination of every man who has reached this age period.—M. E. H.

**Endocrine Control of Prostatic Cancer.** HUGGINS, C. [Univ. of Chicago, Chicago, Ill.] Science, 97:541-544. 1943.

This paper reviews the endocrine background and the present state of knowledge concerning the control of prostatic cancer by castration or administration of estrogen.
The normal prostate is under the control of two types of hormones. Androgens bring about an increase of size of the gland, and the initiation and maintenance of the function of prostatic epithelium. Estrogens have the opposite effect through their capacity to "neutralize" the activity of androgens with respect to the prostate.

Prostatic cancer retains some of the properties of normal prostatic epithelium. Particularly, it produces acid phosphatase in such amounts that the increase of this enzyme in the blood may be used as a diagnostic test in advanced cases of the disease. When the bones are invaded there is an increase also in alkaline phosphatase resulting from increased osteoblastic activity. Furthermore, prostatic cancer frequently retains the normal property of reacting to androgens and estrogens. Reduction of androgens by castration or estrogen administration is followed by a sharp fall toward normal values of acid phosphatase in the blood. Alkaline phosphatase increases slowly for several weeks, apparently as a result of healing of bony lesions, after which there is a decrease of this enzyme. Along with these changes in the phosphatases there is a relief of pain, an improvement in appetite, and often a pronounced decrease in the size of the tumor and its metastases.

The results of endocrine treatment of prostatic cancer fall into three groups. Less than 5% of patients receive little or no benefit. The remaining two groups, larger and equal in number, show respectively an improvement that is pronounced but unsustained (less than 18 months), or a pronounced and prolonged regression of the disease. The author suggests that the failure cases may be due to secretion of androgens in organs other than the testes, or a pronounced and prolonged regression of the disease.


At the time of the report 1 year had elapsed since operation in 1 case, 6 months in 7 cases, and less than 6 months in 7 others. The age of the patients ranged from 58 to 88 years. All of them had far advanced carcinoma of the prostate on rectal examination, the diagnosis being confirmed by biopsy in 12. In the majority of cases there was complete relief of pain within 48 hours, a pronounced improvement in appetite, a gain in weight (15 to 30 pounds), and an increase in the red blood cell count; in 2 patients with prostatic obstruction the symptoms disappeared entirely. Roentgenograms failed to show regression of the metastatic lesions, and in 1 case, there was definite progress of the lesion. Thus, from these early results it can not be stated that castration is a cure for carcinoma of the prostate. An increase in serum acid phosphatase is considered to be pathognomonic of metastasizing prostatic carcinoma.—A. C.


A pedunculated growth of the trigone in a man of 83 contained islets of cartilage and other mesoblastic tissues. The epithelial components were limited to a thin surface layer of squamous epithelium and to small masses of similar cells nearby that seemed to be extensions into crevices. Two figures illustrate the various types of neoplastic cells. The literature yields but few reports of similar cases.—J. G. K.

Oral Cavity and Upper Respiratory Tract


A case report.—A. C.


In the series reported, males were affected almost 6 times as frequently as females. Many of the males were heavy smokers. Except for 1 sarcoma, all the tumors were epithelioid carcinoma. Constant and persistent hoarseness was the most common symptom; in 6 cases, the first symptom was the presence of enlarged glands in the neck. Of 103 cases, only 9 were considered suitable for laryngo-fissure, and in only 4 of these did surgical treatment succeed. Three of 5 patients who submitted to laryngotomy may be considered cured, 5, 5, and 16 years respectively, after operation.—A. C.


The tumor, an epidermoid carcinoma associated with mucus, developed on the inner surface of the cheek when the infant was 3 months old. The growth was removed under anesthesia with no apparent recurrence 10 months after operation.—A. C.


Report of a case, including a description of the treatment by surgery, radium, and x-ray. There was no recurrence of the tumor 6 years after operation. A general discussion of the subject is based on 12 instances of malignant epithelial tumors of the nasopharynx or antrum treated at this clinic during the past 14 years.—A. C.
INTRATHORACIC TUMORS—LUNGS—PLEURA


Bronchiogenic adenocarcinoma when the boy was 11 years old. The patient survived 7 years. While under observation, he developed an eosinophilic adenoma of the pituitary, with resulting symptoms of gigantism. The lung neoplasm responded surprisingly well to radiation minus the right colon and proximal third of the transverse colon, and preliminary tube colostomy for lesions of the remaining colon. Resection with immediate anastomosis is the method of choice for the second stage. Delayed closure of the abdominal wound by Colle’s technic is recommended.—W. A. B.


The technic of removal is described, and emphasis is laid on the danger of malignant degeneration of polyps of the colon and rectum.—W. A. B.


The histories of 331 patients treated during 1938, 1939, and 1940 are reviewed; 191 patients were males. Carcinoma of the rectum, including the rectosigmoid, accounted for 62.15% of the cases, and carcinoma in the colon or sigmoid, for 37.85%. The duration of symptoms was less than 1 year in 60.7% and less than 6 months in 38.4%. In 13.88% of 280 resections there was no gross or microscopic evidence of metastases, in 40% there was invasion of regional lymph nodes, and in 9.6% hepatic metastases were present.

Of 503 patients seen from 1938 to 1941 inclusive, resection was done on 420 (83.5%), with 45 operative deaths (10.7%). Among 168 patients who had a one-stage abdominopereineal resection there were 11 deaths (8.5%). There were 12 deaths in 87 patients who had a two-stage abdominopereineal resection; 3 deaths among 15 patients submitting to perineal resection; and 15 deaths among 133 patients with Mikulicz resections.

A summary of the end results of 162 resections done during the years 1932 to 1936 inclusive showed that 75 patients (46.3%) survived from 5 to 9 years. Twenty-two died postoperatively, and 65 died of recurrence.—W. A. B.


The technic of removal is described, and emphasis is laid on the danger of malignant degeneration of polyps of the colon and rectum.—W. A. B.


The technic is described.—W. A. B.


Thirteen of 14 patients with right lower quadrant pain were relieved by appendectomy. In all 14 cases, neuroma (Schwannoma) was found.—W. A. B.


Approximately 275 lipomas of the gastrointestinal tract are on record. Six more are reported. They occur most frequently in the large intestine and small intestine. The second most frequent location is the stomach. In the stomach the lipomas occur predominantly in the fundus, especially in the antrum. In the duodenum they are especially frequent in the first portion, and in the jejunum in the first 3 feet. The average size of the stomach lipomas is smaller than those of the small intestine. The average size of the duodenal lipomas is smaller than those of the colon. The average size of the lipomas of the large intestine is smaller than those of the small intestine. The average size of the lipomas of the ileum is smaller than those of the colon. The average size of the lipomas of the colon is smaller than those of the small intestine. The average size of the lipomas of the rectum is smaller than those of the small intestine.

The technic of removal is described, and emphasis is laid on the danger of malignant degeneration of polyps of the colon and rectum.—W. A. B.
frequently as single tumors, and more than half (56%) are in the small intestine. About 90% arise in the submucosa; most of the subserous lipomas occur in the large intestine where they originate from the appendices epiploicae. The symptoms are those of intestinal obstruction, produced by the tumor itself or by intussusception. Preoperative diagnosis is rarely if ever made.—W. A. B.

**BLOOD VESSELS**


Nine cases are described of a vascular tumor characterized by endothelial tubes and sprouts with a surrounding sheath of rounded and sometimes elongated cells. These are presumed to be derived from capillary pericytes (of Zimmermann), which are contractile cells with long processes that encircle capillaries and serve to regulate the caliber of their lumens. In one patient the tumor was malignant and in another, probably malignant.—W. A. B.

**LEUKEMIA, LYMPHOSARCOMA, HODGKIN'S DISEASE**


Report of a case in a 2 1/2 year old boy.—C. J.M.


Report of a case of chronic myeloid leukemia in a 6 week old infant. The child died of bilateral broncho-pneumonia. Treatment of the leukemic condition by roentgen irradiation had been ineffective. From a review of the cases available in the literature, this appears to be the earliest age at which this disease has been recognized.—A.C.


The case of Hodgkin’s disease was apparently not congenital since, on repeated examination, the mother and a child born subsequently showed no evidence of the disease. The patient, a girl, had been found normal upon examination 10 days after birth, and was 4 months old when the first symptoms were noticed. The illness gave the characteristic picture of Hodgkin’s disease of the abdominal type with a very rapid course, causing death within 2 months, with extensive lesions in practically every organ. The course of the disease was marked by intermittent fever. The peripheral blood contained an abnormal type of lymphocyte, which might have led to an erroneous diagnosis of lymphocytic leukemia.—A.C.


Further report of a case that has been followed for 15 years. The diagnosis remains in doubt.—C. J.M.

**MISCELLANEOUS**


A description and illustration of the device.—A. K.


The paper describes a case of teratoma of the pineal body in an 11 year old boy, the 18th tumor of this type to be reported. A spongiosablastoma multiforme of unilateral development within the tumor, invaded the surrounding structures widely, infiltrating the hypothalamus. Symptoms of pineal tumors are of two types: (a) Mechanical signs of increased intracranial pressure, which may be intermittent. (b) Endocrine disturbances that may produce the striking picture of macrogenitosomia praecox. The child showed pubertas praecox, initial symptoms of pituitary cachexia, and finally, signs characteristic of involvement of the quadrigeminale plate and the hypothalamus. Neurological symptoms were late. The patient had all the outward manifestations of depression, without being aware of such emotion. The course of the disease was marked by increased apathy, anorexia, persistent vomiting of all solid food, and progressive weight loss till death.—A.C.


Report of a case in a boy of 7.—C. J. M.


The paper includes a report of a case of Wilms' tumor in a 5 year old girl. The tumor was removed surgically, and extensive x-ray therapy was used both before and after operation. Death occurred 10 months later, 2 months after metastasis had appeared in the chest. Although used in this case, it is concluded that preoperative x-ray therapy should be avoided. It is felt that any delay in the surgical removal of the tumor and reactive changes brought about in the growth by radiations may favor the dissemination of tumor cells. Other retroperitoneal tumors of children are discussed.—A. C.
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