THE INFREQUENCY OF CARCINOMA OF THE CERVIX WITH COMPLETE PROCIDENTIA

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The interest of the senior writer in this subject was aroused by a discussion with the late John G. Clark, in 1927, just before his death, who asked him how often he had seen carcinoma of the cervix with complete procidentia. Doctor Clark, at that time, stated that in all of his experience he had never seen the two conditions associated.

We believe that the association of carcinoma of the cervix and complete procidentia is so rare that the report of a case is worthwhile, that a review of the literature on the subject and a speculation as to why the two conditions are so rarely seen associated may be of interest.

We have written to many leading gynæcologists and general surgeons wishing first to establish the rarity of the condition and to determine, if possible, why in complete procidentia carcinoma of the cervix seldom occurs, when apparently at first thought the existing conditions should be most favorable to its development.

Case No. B-20077.—J. M., married, aged fifty-three years, admitted December 26, 1929. Marital history: three pregnancies, each terminating in normal delivery, no miscarriages. Six months before admission the patient noticed a mass protruding from the vagina. A short time prior to the discovery of the protrusion she developed a bloody discharge between the menstrual periods. This bleeding began with a normal menstrual period and continued until admission. Because of the protrusion and the bleeding she had worn a tight napkin. Nine months ago she began to lose weight, in spite of a good appetite, and complained of a low backache. She developed attacks of dysuria, frequency and nocturia. She had never had the urine examined before coming to the clinic. She was a well-nourished female with an anxious expression. Heart slightly enlarged, no murmurs, no irregularities. Lungs, negative. Abdomen, negative.

Pelvic Examination.—Complete prolapse of uterus. Cervix is greatly elongated, hypertrophied, the left cervical lip is eroded, ulcerated, bleeds easily to the touch and is indurated. A foul discharge is present.

Blood-pressure.—Systolic, 165; diastolic, 110. Pulse, 84. Temperature, 99°.

Laboratory.—Blood count: hæmoglobin, 75 per cent.; red blood-cells, 4,720,000; white blood-cells, 7,000; differential, 56-44. Kahn, negative. Urine: specific gravity, 1030; alkaline, trace of albumen, 1.2 per cent. sugar, few pus cells, no red blood-cells, no casts. Blood sugar, 307 milligrams per 100 cubic centimetres of blood. Blood urea, thirty-two milligrams.

Diagnosis.—Complete procidentia, carcinoma of cervix, diabetes.

The patient was placed upon a proper diet with insulin and in twelve days she was sugar-free and in condition for operation.

January 7, 1930, operation.—Vaginal hysterectomy, Mayo type for complete prolapse.

Pathologist's Report.—Specimen consists of uterus and cervix thirteen centimetres in length. The cervix everted, ulcerated, greatly hypertrophied, measuring 5.5 centimetres in diameter. Mucous membrane is firm, dark red and slightly eroded. On section the wall of the uterus is 3.5 centimetres thick and contains considerable fibrosis. The cavity of the uterus is large and contains five polyps. The ulcerated area on the left side of the post-cervical lip extends into the cervical canal. Sections taken from this area show carcinoma epidermoid Grade III.

After a stormy and prolonged convalescence, during which time decubitus ulcers developed, the patient was discharged April 15, 1930. She returned to the hospital December 5, 1930, showing undoubted evidence of a widespread metastasis and died January 27, 1931. No autopsy was permitted.

Clinical treatises on gynæcology and surgery pay little attention to the subject. In 1882, Fritsch stated that patients with prolapse of the uterus seemed to be refractory to carcinoma of the cervix. Pomtow, in 1893, reported a case and a review of the literature at that time, finding twenty-eight cases reported in the literature. Andrews, in 1923, reported a case of a patient, aged seventy-seven years, with carcinoma and prolapse. Constantini, in 1923, reported a case, as did Nicholson in the same year. Stajano discussed the clinical differences of traumatism in the development of carcinoma of the cervix seen in prolapse.

A careful examination of the French literature shows practically no cases on record. Delvaux, in 1931, discussed the resistance of the cervix to carcinoma in total prolapse and sent out a questionnaire. In the replies from the various French surgeons he found that Hamant, of Nancy, had never seen a case. Leriche had seen but one case. Brouha had seen no cases. Foure had seen four cases, but considered it rare. Hartmann never had seen carcinomatous degeneration of the cervix with prolapse. Sebrechts had operated upon many hundreds of cases of complete prolapse and had never seen carcinoma with prolapse. Pauchet replied that true carcinoma of the cervix with procidentia is practically never seen. Backer, too, believed carcinoma of the cervix to be very rare and in the examination of 11,000 women failed to see a single case of carcinoma of the cervix with prolapse.

In 1932, Matyas reports a case of sarcoma of the cervix in a young patient of twenty-three with prolapse.

C. C. Norris (personal communication, 1930) reports that six cases were recorded in a discussion before the American Gynæcological Society a few years ago; and one or two instances were placed on record before the Philadelphia Obstetrical Society. The combined experiences of the members of these societies are enormous.

Judd, of The Mayo Clinic, reports but three cases of carcinoma of the cervix in about 2,188 cases of procidentia.

Smith, Graves and Pemberton report having seen three cases of carcinoma of the cervix in 1,000 procidentias.

In the questionnaire referred to above, reasons for the infrequent association of carcinoma of the cervix and prolapse were invited and the number of cases seen by each surgeon, or in different clinics, was requested. A brief analysis of forty-eight replies will now be given.

Twenty-eight surgeons (58.3 per cent.) reported having never seen a case, among whom were Novak, Anspach, Baldy, Vaux, Ward, Piper, Royster, Bartlett, Brent, Casler, Gellhorn, Montgomery, Müller, Maes, Keen, Hirst, Mitchell and Gardner. No cases have been seen in the Crile and Lahey clinics. It is very safe to say that the combined experience of these outstanding gynæcologists and general surgeons represents a study of many thousands of cases of procidentia. Two surgeons report finding carcinoma of the body associated with complete procidentia, but neither has seen carcinoma of the cervix with complete procidentia.

Eleven men report having seen one case, among whom are Abell, Sampson, Cullen, Richardson, Healy, Chalfant, King, Norris, Payne and Haggard.

Four men—Jeff Miller, McGlinn, the late J. O. Polak, and Taussig—report having seen two cases. Farmer has encountered the condition three times; Howard Kelly and A. H. Curtis both report having seen a very few cases.

Thirty-two surgeons (62.5 per cent.) offer no explanation for the infrequent association of carcinoma of the cervix with complete procidentia. Sixteen suggest various reasons for the rarity; less vaginal secretion and free drainage was mentioned nine times; cornification of the cervical epithelium resists the development of carcinoma was suggested nine times; the lessened area of infection in a prolapsed cervix may safeguard the patient from developing carcinoma was spoken of four times. Sixteen men mention chronic irritation and chronic ulceration of the cervix in prolapse, but do not believe it the cause of carcinomatous development. Three men suggest the usual factors which cause carcinoma, but do not mention what these factors are. One believes prolapse develops at a later time in life than that in which carcinoma of the cervix is seen; one, that the patients seek operation for carcinoma of the cervix before prolapse has taken place; another, that carcinoma of the cervix forms a fixed point and prevents prolapse occurring; one, that the carcinoma may form before the prolapse; two surgeons suggest that the absence of acid secretion may be the cause and another mentions an unknown constitutional factor.

In analyzing these various reasons why carcinoma of the cervix is seen so infrequently with procidentia, the cornified cervical epithelium becoming resistant to the development of carcinoma and less vaginal secretion, absence of infection and free drainage appear to be the commonest reasons given for the protection against carcinoma.

Smith, Graves and Pemberton, in reporting their three cases in 1,000 patients with procidentia, believe that good pelvic drainage with the absence of retained chemically changed irritating secretions plus a cornification of the epithelium of the cervix are the reasons for the infrequent associations. When the cervix is exposed to chronic irritation and dried by exposure to the air it becomes more like skin, cornified and hardened, which is not as vulnerable a tissue as some of the softer structures, as mucous membrane; only when insults are continued for a long time on an irreducible prolapse is the epithelial differentiation unable to maintain the balance of the continuous new cell formation and there results an epithelial over-growth which Waldeyer considers carcinoma to be.

In regard to free drainage, it is well to remember also, that carcinoma is more easily produced in animals by chemical irritation rather than traumatic irritation. With free drainage there is a lack of chemical irritation.

Procidentia with carcinoma of the cervix may be influenced by the age group, for carcinoma of the cervix is usually seen in relatively younger women, the older women thus have gone safely through the period when carcinoma usually develops, finally developing prolapse without carcinoma; those of the younger age may develop carcinoma of the cervix and are cured or succumb before procidentia develops; also, carcinoma of the cervix by causing fixation of the uterus may prevent the development of procidentia. It is well known that carcinoma is wont to develop at points of fixation in other organs and systems.

The ulcers seen on the irritated cervices with prolapse are more often of the decubitus type. When the prolapse is complete, there is torsion of the blood-vessels which greatly reduces circulation with resultant venous stasis. The process is very much like that seen in varicose ulcers of the leg; there is œdema, venous congestion and sclerosis of the skin, which lead to atonic ulceration, with little tendency to cicatrization. The ulcers which often ap-

pear are trophic in type. When the situation of carcinoma is considered, it is always in an area of good blood supply as well as in an area of chronic irritation. (C. H. Mayo, de Takats and Novak.)

Has the acid secretion in the vagina something to do with the development of carcinoma of the cervix? Carrell, in keeping alive malignant tissue, found that this tissue developed an acid area on its advancing margins whereas the margin about growing normal tissue, was alkaline. W. J. Mayo brings up this point and says: "Carcinoma of the stomach is common, but here again there is an acid secretion. In carcinoma of the stomach is the reduction in acidity a result of the cancer, or has it more direct relationship? Again, in the colon where cancer is frequent, the secretion, like that in the vagina, is acid as a result of bacterial action. Have the acid secretions something to do with the development of carcinoma in the presence of chronic irritation?"

One must not forget the specific diathesis of the individual patient when considering reasons for the development of carcinoma in any given case; there should be a hereditary factor together with the proper kind and amount of irritation at the proper time. In many of the cases conditions favorable for the presence of carcinoma of the cervix were present in the form of laceration from childbirth and infections, the carcinoma developing after the prolapse. Would carcinoma have developed in some of these patients had procidentia not occurred?

The number of cases reported is too great for the rarity to be used as an argument against the irritation theory entirely; on the other hand, no matter how great the irritation to which the prolapsed cervix is exposed by rubbing of the clothing, the thighs, tight supporting pads, irritation from urine, carcinoma of the cervix probably does not occur without a hereditary predisposition on the part of the patient.

Delvaux pleads for a systematic investigation of this mysterious immunity of the cervix to carcinoma in the presence of procidentia and believes, strongly, that as a result of such an investigation, there would be a great advance in the discovery of the etiology of cancer.

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DISCUSSION.—DR. F. N. G. STARR (Toronto) recalled an elderly woman of seventy-five whom he saw years ago. After she had had a procidentia for some thirty years she began to have bleeding. At first she thought she was renewing her youth but when the bleeding persisted and the foul discharge occurred, she sought some relief. Doctor Starr found she had a carcinoma and did a vaginal hysterectomy. He promised her he would drink a cup of tea with her on her eighty-fifth birthday, and that came off just about a year ago.

DR. JAMES C. MASSON (Rochester, Minn.) said he had operated on several cases with extensive prolapse, with extensive ulceration, and in many of these cases the patients thought they had malignancy, and their attending physician had thought malignancy existed, but in his own experience he had never operated on a patient with complete prolapse of the uterus in which cancer of the cervix existed. He considered the age factor as the most important consideration. The majority of women who develop malignancy of the cervix develop it close to the menopause time. At that age, he said, we see very few patients with complete procidentia. Later on, after the menopause, on account of the atrophy associated at that time, if there is a tendency to prolapse, the uterus rapidly sinks to a lower level. That is the time these women consult a surgeon for procidentia. The acid secretion of the vagina probably is a factor predisposing to cancer of the cervix and when the cervix protrudes beyond the vulva, this cause is eliminated.

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