

Cervical cuff carcinoma: causes and prevention

Z. Tsitsishvili, L. Charkviani, T. Charkviani

Gynecological Clinic of Prof. A. Gvamichava National Cancer Center, Tbilisi (Georgia)

Summary

Over an 11-year period (1990-2000) a total of 59 patients with cervical cuff carcinoma were hospitalized (I stage - 17; II stage - 30; III-IV stage - 12 patients). Seventeen patients were subjected to radical extirpation with lymphadenectomy for cervical cuff carcinoma, while 42 patients received combined radiotherapy. In the last 20-year period the patients had undergone supravaginal amputation of the uterus due to uterine fibromyoma, polyposis, and ovarian tumors in various gynecological clinics. In 12 patients the onset of cervical cuff carcinoma occurred within one year after supravaginal amputation of the uterus; in another six patients cancer developed within two years postoperatively, 15 patients in a 3 to 9 year period and 26 developed cancer 10-20 years after surgery.

It seems in fact that when cervical cuff carcinoma developed within one year after supravaginal amputation of the uterus the patients had cervical carcinoma which was not identified due to physician negligence. In cases of latent periods up to ten years the patients must have had at least pre-existing disease. To prevent development of cervical cuff carcinoma in the future when operating on the uterus and/or adnexa the scope of surgery (extirpation, amputation) shall be decided based on colposcopic examination of the cervix (target cytology).

Key words: Cervical cuff carcinoma; Colposcopy; Prevention.

Introduction

Tumors developing on the part of the cervix that remains after supravaginal amputation of the uterus are known as tumors of the cervical cuff. Malignant tumors such as carcinoma and sarcoma are the ones that are most commonly encountered on the cervical cuff.

From the very moment of the foundation of the Research Institute of Oncology in Georgia in 1958, the problem of the development of carcinoma of the cervical cuff became one of the priorities of the Institute. The first research work was published in 1967 [1]. In this work the authors analyzed 23 cases of carcinoma of the cervical cuff in patients admitted to the gynecological clinic from 1963-1967. Within the same period a total of 964 patients in the clinic were treated for cervical carcinoma. Hence the incidence of carcinoma of the cervical cuff was 2.4%. In one case sarcoma of the cervical cuff was diagnosed (0.13%); a latent period from the supravaginal amputation of the uterus to the onset of carcinoma varied from eight months to 11 years. In nine patients carcinoma of the cervical cuff developed within the first three years after the operation due to cervical carcinoma. In ten cases the cervix was not examined. It can be concluded that more than half of the patients by the time of supravaginal amputation of the uterus had already had precancer or history of disease. This required more wide-scale surgical intervention such as total extirpation of the uterus, which would prevent the development of carcinoma of the cervical cuff.

In the monograph by L. Charkviani in 1987 [2], which described the surgical treatment of 1,000 cases of cervical carcinoma from 1964-1982, the author provides 98

cases of coincidence of uterine fibromyoma and cervical carcinoma with subsequent supravaginal amputation. In two cases carcinoma of the cervical cuff developed 12-17 years after surgery, while in the remaining cases this period varied from three months to ten years.

According to the data of Revazishvili [3] of 3,057 cases of cervical carcinoma registered at the Research Center of Oncology, Georgia, carcinoma of the cervical cuff was diagnosed in 86 (2.8%) patients. In 36.2% of those patients carcinoma of the cervical cuff developed within three after supravaginal amputation of the uterus. This testifies to the fact that the condition of the cervix was not adequately assessed and examined before the operation.

Materials and Methods

We attempted to determine the dynamics of the development of carcinoma of the cervical cuff in Georgia. The analysis of the available material demonstrated that within the period 1963-67 an average of 4.6 women/year developed carcinoma of the cervical cuff. In the subsequent period (1964-84) this index increased to 5.15 women/year, while for the period from 1971-84 this disease was encountered on average in 6.14 patients/year. Thus the incidence of carcinoma of the cervical cuff was progressively increasing.

One may argue that hospital statistics do not reflect the morbidity rate in the country. Cervical carcinoma is an exception to this rule. The patients with this disease were always referred to our clinic, hence the data provided do reflect the morbidity rate for this disease in Georgia. This invites the conclusion that prevention of carcinoma of the cervical cuff irrespective of the existing knowledge about the causes of its development was far from adequate.

According to the data of various authors the incidence of developing carcinoma of the cervical cuff after supravaginal

amputation of the uterus in patients with cervical carcinoma varied from 0.9% to 10.7% [2, 4, 5]. At the same time uterine fibromyoma, which is encountered in 10-20% of the female population apparently is not a risk factor for development of cervical carcinoma [5, 6, 7, 8, 9].

According to Baramidze [10] supravaginal amputation increases the risk of developing carcinoma of the cervical cuff 60-fold.

We believe that diffuse asymptomatic uterine fibromyomas can hardly be the factors contributing to the development of cervical carcinoma. However carcinoma can develop when of such tumors resulting in precancerous diseases in cases of nodal submucosal fibromyomas with metro-menorrhagia and accompanying inflammatory processes.

Results

Our research of carcinoma of the cervical cuff is the fourth attempt in Georgia and covers the last decade of the 20th century. Within an 11-year period (1990-2000) a total of 59 patients with the carcinoma of the cervical cuff received treatment at the Gynecological Department of the National Oncological Center of Georgia (Table 1).

Table 1. — Incidence of carcinoma of the cervical cuff at A. Gvamichava National Oncological Center from 1990 to 2000.

| | Total | Total | | |
|--------------------------------|-----------|-----------|-----------|-----------|
| | 1990-2000 | 1990-1993 | 1994-1997 | 1998-2000 |
| Carcinoma of the cervical cuff | 59 | 19 | 13 | 27 |
| Average per year | 5.3 | 4.75 | 3.25 | 9 |
| Extended hysterectomy | 17 | 4 | 3 | 10 |
| Combined radiotherapy | 42 | 15 | 10 | 17 |

As is evident from Table 1, on average about five women developed carcinoma of the cervical cuff annually, over an 11-year period. Considering the fact that about one million women over 16 years of age were residing in Georgia in this period of time, carcinoma of the cervical cuff developed in 0.5 women per 100,000. At the same time the incidence of cervical carcinoma was 12-13 women/100,000, which means that carcinoma of the cervical cuff was encountered 25-30 times less compared to the incidence of cervical carcinoma.

A total of 1,664 patients with cervical carcinoma were admitted to both the surgical and radiotherapy department of the Oncological Center within the above period. Respectively, the incidence of carcinoma developing on the cervical cuff was 3.5%.

Our data demonstrate an increased incidence of carcinoma of the cervical cuff over time. Annually an average of three women developed carcinoma of the cervical cuff from 1994-97, whereas in the period from 1998 to 2000 this number increased to nine patients, which means that carcinoma of the cervical cuff morbidity rate increased nearly three-fold. This fact is the result of decreased oncological alertness by gynecologists as a consequence of health-care reform resulting in the collapse of preventive measures.

An increase of carcinoma of the cervical cuff morbidity rate is confirmed by the comparison of our data with Charkviani's data from 1964 to 1982. Annually an average of 5.15 women developed carcinoma of the cervical cuff in Georgia, while from 1998 to 2000 this index increased to nine women. Hence, morbidity increased by 74.7%.

Table 2 provides a clear picture of detection of carcinoma of the cervical cuff. As is can be seen, comparatively early stage I carcinoma of the cervical cuff was detected in only 28.8% (17 cases), Stage II carcinoma being diagnosed in 50.8% of cases. As a result the surgical intervention of extended hysterectomy for carcinoma of the cervical cuff was performed only in 17 (28.8%) cases, while the remaining patients were administered radiotherapy.

Table 2. — Stage-matched incidence of carcinoma of the cervical cuff at A. Gvamichava National Oncological Center from 1990 to 2000.

| Department | Total | By Stages | | |
|--------------|-------|-------------|-------------|-------------|
| | | I | II | III-IV |
| Surgical | 17 | 13 22.0% | 3 5% | 1 1.7% |
| Radiotherapy | 42 | 4 6.8% | 45.8% | 18.7% |
| Total | 59 | 17 28.8% | 30 50.8% | 12 20.4% |

It should be noted that extended hysterectomy in cases of carcinoma of the cervical cuff is a much more complex procedure than in routine cases and requires certain skills. Of the estimated complications, impairment of the urinary bladder in the process of its separation from the cervical cuff is relatively frequent.

According to our data there were no cases of development of carcinoma of the cervical cuff in women under 30. This probably can be explained by the low incidence of uterine fibromyomas and other gynecological tumors at this age. Respectively, supravaginal amputation of the uterus is rarely performed in women of this age group (Table 3).

The majority of patients with carcinoma of the cervical cuff (42.3%) were 40-50 years of age. The age group 50-60 (32.2%) showed the second highest incidence of carcinoma of the cervical cuff. This disease developed only in 11.9% of women from 31-40, while in women aged 60 and over the incidence was 13.6%.

Table 3. — Age of patients with carcinoma of the cervical cuff at A. Gvamichava National Oncological Center from 1990 to 2000.

| Department | Total | By Age | | | | |
|--------------|-------|--------|------------|-------------|-------------|------------|
| | | <30 | 31-40 | 41-50 | 51-60 | 60> |
| Surgical | 17 | — | 5 | 6 | 5 | 1 |
| Radiotherapy | 42 | — | 2 | 19 | 14 | 7 |
| Total | 59 | — | 7 11.9% | 25 42.3% | 19 32.2% | 8 13.6% |

Of 59 cases of supravaginal amputation of the uterus, 54 (91.5%) were performed due to uterine fibromyoma, two due to endometrial polyposis and three because of adnexal tumors.

Duration of the latent period between supravaginal amputation of the uterus and onset of carcinoma of the cervical cuff is provided Table 5.

Table 4. — Cause of supravaginal uterine amputation in patients with carcinoma of the cervical cuff admitted to A. Gvamichava National Oncological Center in the period 1990 to 2000.

| Department | Total | Type of tumor | | |
|--------------|-------|---------------|-----------------------|---------------|
| | | Fibromyoma | Endometrial polyposis | Adnexal tumor |
| Surgical | 17 | 17 | — | — |
| Radiotherapy | 42 | 37 | 2 | 3 |
| Total | 59 | 54 | 2 | 3 |

Table 5. — Latent period between supravaginal amputation of the uterus and onset of carcinoma of the cervical cuff at A. Gvamichava National Oncological Center from 1990 to 2000.

| Department | Total | Latent Period (Years) | | | | |
|--------------|-------|-----------------------|------------|-----------|-----------|-------------|
| | | < 1 | 2 | 3-4 | 5-6 | 10 > |
| Surgical | 17 | 2 | 2 | 2 | 6 | 5 |
| Radiotherapy | 42 | 10 | 4 | — | 7 | 21 |
| Total | 59 | 12 20.3% | 6 10.2% | 2 3.4% | 13 22% | 26 44.1% |

According to the data of experimental oncology and cancer epidemiology it takes at least 10-15 years to develop carcinoma of the cervical cuff. Of 59 of our patients with this carcinoma, 18 (30.5%) were diagnosed with disease within one to two years after surgery for cervical carcinoma. We shall assume that the majority of these patients had already had the malignant tumor by the time of supravaginal amputation of the uterus and that the gynecologists failed to detect an already existing process. This could be the result of physician carelessness or because the cervix was not adequately examined. In 13 patients carcinoma of the cervical cuff developed within five to nine years after supravaginal amputation of the uterus. In these cases we assume the presence of an existing process of precancerous disease, in which case supravaginal amputation of the uterus is unjustified.

Of 59 patients 26 (44.1%) developed carcinoma of the cervical cuff ten years after supravaginal amputation of the uterus. We assume that in these cases the cervix of the patients at the moment of supravaginal amputation of the uterus was free of any pathology: in such situations total

hysterectomy would not have been justified. In these women the causes of development of carcinoma of the cervical cuff were the same as in the patients with primary cervical carcinoma and routine preventive measures should have been administered to avoid the development of this pathology in these women.

Discussion

Colposcopy is the method of choice in examining the cervix and in the decision making about possible removal. Even though in a number of cases cytology of the deformed cervix fails to provide an alarming picture, we consider it justified to remove the ruptured and hypertrophic cervix rather than to leave it as it is. Subsequent development of at least pre-cancerous processes such as moderate and severe dysplasia on such a cervix is highly probable. When necessary the impaired area of the cervix should be detected using colposcopy to obtain a scrape or precise biopsy material which will significantly increase the efficacy of the examination.

Proceeding from the above, we can conclude that the incidence of carcinoma of the cervical cuff in Georgia within the last decade has increased, which can be explained by thoughtlessness and low oncological alertness of gynecologists. Contribution to this is the imperfect nature of the ongoing healthcare reform and the collapse of preventive measures.

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Address reprint requests to:
T. CHARKVIANI, M.D.
Chikovani St. 20 Fl. 56
380015 Tbilisi (Georgia)