The influence of surgery of cervical intraepithelial neoplasia (CIN) and cervical carcinoma on quality of life

Wpływ lecznictwa chirurgicznego śródniektnowej neoplasji (CIN) i raka szyjki macicy na jakość życia

The aim of the study was to determine to what extent cervical intraepithelial neoplasia and cervical cancer surgery affect a woman’s mental state and how does it affect her interpersonal relationships, sexual activity, family life, and her professional and social activity. The clinical material consisted of 153 women aged 20 and 47, who were diagnosed and treated by the Chair of Gynaecology and Obstetrics, Jagiellonian University Medical College in Kraków between 2006 and 2010, and were confirmed to have CIN3 and cervical carcinoma stage IA. An originally constructed survey form consisting of 108 questions and divided into 5 research stages was implemented. H.J. Eysenck’s Personality Questionnaire, and Physical and Mental State Questionnaire KS-40. Results: The diagnosis generated a change in the patients’ self-images: prior to the diagnosis, 74.6% considered themselves to be completely healthy, whereas after the diagnosis was given 40.5% of respondents had the feeling of illness, and 33.3% of the moderately illness. Conclusions: The diagnosis of CIN and microinvasive cervical cancer, and surgical procedure, invokes a feeling of being unwell in a woman who previously felt completely healthy, and significantly impedes quality of life. The diagnostic-therapeutic management induces general anxiety, worry about preservation of the generative organ, sexual intercourse, fertility, changes in the dynamics of the family and in the professional field, as well as changes in interpersonal relationships.

Introduction

Despite a considerable reduction in the incidence of cervical carcinoma, which is particularly evident in countries that have introduced cervical screening programs, 493 234 new cases of cervical carcinoma were
diagnosed in 2002 worldwide, with 273,505 women died from it [1,4]. In countries such as India, Bangladesh, Brazil, Costa Rica, cervical carcinoma continues to be the most common of malignant cancers in women. Recent epidemiological research in Haiti and Saudi Arabia have show that the incidence of cervical carcinoma is 87.3/100,000, and 2.0/100,000 respectively.

The incidence of cervical carcinoma and the mortality rates in Poland are fairly high. In 2005, 3,263 new cases of cervical carcinoma were diagnosed, which accounts for 5.2% of all carcinoma cases in women, thus making it the fourth most common cancer type in women. Of these new cases, half of the patients died.

When comparing the histological subtypes of invasive cervical carcinoma, the most common is squamous cell carcinoma (SCC), which occurs in 3 types: keratinizing, non-keratinizing, and small cell. SCC constitutes over 90% of all types of cervical carcinomas. Adenocarcinoma and adenosquamous carcinoma account for 5-10% and 1-3% of all cases respectively. The average age of women afflicted with adenocarcinoma is higher (56 years old). Both of these types have a lower 5-year survival rate than SCC. This fact is attributed to the difficulties in detecting precancerous lesions and starting treatment in the early stages of the carcinoma. Other histological types are clear cell carcinoma, glassy cell carcinoma, mesonephroid carcinoma, adenoxytic carcinoma or cylindroma, small cell carcinoma, basaloïd carcinoma, as well as sarcomas, lymphomas, and melanomas, which altogether constitute 1-2% of malignant cervical neoplasms.

Early developmental stages of cervical carcinoma occur in young women of reproductive age. More advanced stages of cervical carcinoma can be fully treated with conservative surgery which spares the generative organ. Literature provides data mainly on the influences of radical operations of invasive cervical carcinoma on the physical condition and the mental state of a woman. Research on the influences of diagnosing early stages of cervical carcinoma, the subsequent therapeutic management on the psychophysical condition and ultimately the quality of life of a woman remain scarce.

**Aim**

The aim of the study was to determine:
1. To what extent premalignant and malignant neoplasms of the uterine cervix in the early stages of the disease affect a woman's mental state;
2. How and to what extent is the information on the nature of the disease and the therapeutic options communicated by the doctor to the patient;
3. How are diagnostic procedures and surgical treatment, taking into account the degree of surgical intervention, influenced by a woman's mental state in the postoperative period? How does it affect her interpersonal relationships, sexual activity, family life, and her professional and social activity?

**Methods**

The study analyzed the cases of 153 women between the ages of 20 and 47 years, who were diagnosed and treated by the Chair of Gynaecology and Obstetrics, Gynaecology and Oncology Clinic of the Jagiellonian University Medical College in Kraków between the years of 2006 and 2010, and were confirmed to have CIN3 and cervical carcinoma stage IA. The degree of progression of CIN and cervical carcinoma stage IA were diagnosed through colposcopic examinations, Pap smear and histological testing of a directed biopsy taken under colposcopic supervision, and based on the colposcopic-histological criteria used by the Clinic to determine cervical carcinoma stage IA (IA1 and IA2).

Therapeutic management was dependent on the so called "pretherapeutic case management conferen¬ce" which took into consideration the type of lesion, its location, stage of disease, coexistence of other gynaecological conditions, patient's age, her desire to maintain fertility, and involved cryonization, cold knife conization, simple hysterectomy and radical hysterectomy without adnexa, or with one adnexum.

During the patients’ stay in the Clinic, the women underwent a psychological examination. The aim of this assessment was to assess the impact of being diagnosed with precancerous or early cancerous lesion, and the prospect of surgery on the patient's emotional state, her family life, interpersonal relationships, professional and social life. All of these factors basically encompass the patient's quality of life. The above-mentioned issues are not easily assessed or verified as they are immeasurable, and hence the conclusions drawn from them must be confronted with a great number of observations.

For this purpose, a specifically constructed survey form consisting of 108 questions and divided into 5 research stages was implemented. H.J. Eysenck's Personality Questionnaire, and Physical and Mental State Questionnaire (Kwestionariusz Samopoczucia) KS-40. The first stage of the research was carried out prior to any surgical procedures, with data being collected on the current disease, status of overall health, current relationships, family life, as well as the professional and social activities of the patient. The second stage of the research was conducted before the patient's discharge and pertained to evaluating the mutual influence of the doctor and patient on one another, difficult moments related to the patient's stay in the clinic and the diagnostic-therapeutic procedure, as well as the patient's anxiety related to her return home. The third stage of the research was executed 3, 6, and 12 months post surgically. This evaluation was related to the influence of the disease and the surgical procedure to the changes of the patient's self-image, her family relations, professional and social activities. In addition, personality evaluations using the Eysenck Personality Questionnaire was carried out, and the research subjects were assessed and divided by the level of neurotism, extrav- and introversion, and intensification of defense mechanisms (t). Then, using the Physical and Mental State Questionnaire (Kwestionariusz Samopoczucia) KS-40, the patient's emotional state before the surgery and 6 months after the surgery were assessed.

The collected material was analyzed with the use of the Chi² test, Cochran's test and MaNamar's test, and presented in the form of tables, figures and graphs. The conducted analyses showed the waiting period for the cytological and histological examination results was the major stress factor during the time of diagnostic treatment.

**Results**

The establishment of diagnosis generated a change in the patients’ self-images: prior to the establishment of diagnosis, 74.6% considered themselves to be completely healthy, whereas after the diagnosis was given 40.5% of respondents had the feeling of illness, and 33.3% of women considered themselves moderately ill.

It was noted that a proper relationship with the doctor is fundamental to the psychological state of women during the whole diagnostic-therapeutic management. A statistically significant relationship (p<0.05) was demonstrated between the doctor's expla-
nations of the nature of the disease and the range of the surgical procedures available, with the reduction of the anxiety level in the patient. Providing a full explanation of the nature of the disease caused a substantial or partial reduction of anxiety in 80.5% of patients. Communicating information on a level of patient and doctor being equals with mutual participation on both sides, resulted in an increase in the patient's confidence in the doctor, and an easier course of both therapeutic procedure and convalescence.

Another factor which can greatly assist the patient's ability to maintain a positive state of mind is the support of the family upon hearing a diagnosis of malignancy. The presence of the patient's spouse, particularly in providing emotional support during the conversation regarding diagnosis, treatment and prognosis with the doctor helped the patient cope with the overwhelming amount of information.

Interestingly, the greatest percentage of hospitalized patients (42.4%) stated that the most difficult moments of the diagnostic-therapeutic procedures were the first days of the hospital stay, and waiting to undergo the surgical procedure, rather than the surgical procedure itself, as one might expect. Analysis of the influence of the disease process and the past surgical treatment also included factors such as somatic and psychic ailments related to the surgery, changes in self-image, the atmosphere at home, sexual intercourse, emotional state of the woman, personal assessment of the future, housework and professional activity, rest, environmental influences; in other words, factors determining the quality of life. Early and minor postoperative complications occurred in 10.5% of the women, and ailments related to the surgical treatment persisted within 3 months of the surgical procedure; 96% of the women subjected to simple hysterectomy and 68.8% of the women subjected to radical hysterectomy became sexually active within the 12 months after the procedure.

The women who underwent either simple or radical hysterectomy displayed a statistically significant (p<0.05) decreased interest in sexual intercourse, they considered themselves less attractive as sexual partners, reached a lower level of sexual gratification, and suffered from more ailments related to sexual intercourse in comparison to the women subjected to cryoactivation and conization, within the same period after the treatments.

The patient's approach toward her future was considered with reference to the progressional degree of the disease, type of surgical procedure and time passed since the procedure. Subjective assessment of the future proved to be dependent on the type of surgery, and statistically, it improved significantly as time passed. No actual correlation regarding the degree of progression of the neoplasm to the patient’s approach to their future outlook was observed.

A faster return to full household activity, as well as professional and social activity was statistically significant (p<0.05) in patients who underwent cryoactivation or conization, in comparison to those who had been subjected to simple or radical hysterectomy. Along with the radical nature of the surgical treatment, the passage of time with regards to the procedure proved to be of great importance.

During a follow-up examination carried out 6 months after the surgical procedure, the patient's emotional state was examined with the use of Physical and Mental State Questionnaire (Kwestionariusz Samopoczucia) KS-40, and a statistically significant reduction of the analysed parameters was observed, in comparison to their considered high level prior to the planned surgical procedure. It was also noted that the surgical procedure affected neither the patient’s relationship to the surroundings nor her attachment to the environment in which she lived. There was a statistically significant (p<0.05) correlation between the extension of the time for recovery (rest and relaxation after surgery), and the benefits for improved quality of life when compared to the pre-operative period.

Discussion

The literature has a scanty number of studies concerning the effects of radical treatment of cervical cancer. Thus far, we have seen the challenges posed by aggressive treatment-physically and psychologically. The objective of our study is to consider the effects of pre-cancer CIN3 as well as early stage cervical carcinoma stage IA diagnosis and treatment on a woman's well being. We considered three components of a woman's well being: sexual, social as well as image or self-perception.

Thus far, the literature has raised important issues facing women undergoing gynecological cancer treatment. One of these issues commonly discussed is sexuality and intimacy after cancer therapy. Our objective was to understand how pre-cancer and early stage cervical cancer treatment affects a woman's sexual function. In order to fulfill this objective, we followed patients diagnosed with CIN3 and cervical carcinoma stage IA in the Gynecology and Oncology Clinic of Jagiellonian University Medical College in Krakow, Poland.

Jensen et al. [7] noticed that patients have experienced the decline of sexual function, including a lack of sexual interest and discomfort during sexual intercourse following radical hysterectomy. Similarly to this study, we followed patients diagnosed with precancer CIN3 or early cervical carcinoma stage IA using self-assessment questionnaires. The results of our assessment further showed that women had diminished sexual gratification after radical hysterectomy and suffered more problems with sexual intercourse compared to less radical surgeries such as cryoactivation and conization. These findings are similar to Jensen et al. [7]. Importantly, the amount of time following surgery also influences how a woman feels regarding sexual intercourse [3,7]; for example, patients may report discomfort for 6 months post-operatively, severe dyspareunia for the first 3 months post-operatively and sexual dissatisfaction during the first 5 weeks after radical hysterectomy [3,7]. As discussed, we found that patients who underwent simple or radical hysterectomy had more problems with decreased interest in sexual activity and felt less attractive compared to those who underwent cryoactivation or conization and these patients also resumed sexual activity after a longer period of time compared to

Figure 3
Patient's concerns upon return to home.
less radical procedures.

We now consider a woman's social well-being during precancer or early stage carcinoma treatment and the importance of a supportive environment. As discussed, a good doctor-patient relationship reduces the patient's anxiety by promoting better dialogue and mutual understanding between doctor and patient, meanwhile building trust. Additionally, the patient's family offers emotional support enabling patients to come to terms with diagnosis and treatment. In an article written by Hammer K et al., hope was studied in women with newly diagnosed gynecological cancers [5]. It was found that hope prevailed with the trust of being cured and in being in a relationship with significant others [5,3]. Therefore, we find that the patient's relationship with her doctor as well as family support contribute to the psychological state of women being diagnosed and treated for precancer or early stage cervical carcinoma. Finally, we see that patients who underwent cryonization or conization returned to social and household duties more quickly compared to those patients who underwent simple or radical hysterectomy.

Women diagnosed with noninvasive cervical cancer are often not the focus of studies concerning self esteem [2] while we strongly consider this an important group to study. Some have studied quality of life in women with cervical cancer, discussing the importance of addressing a woman's difficulties-emotional and psychological-in an empathetic and non-threatening environment [6] which often lies within the family structure.

Furthermore, treatment can cause distortion of body image as reported by Herzog et al. [6]. In our study, a woman's self image was similarly dependent on many factors including the time elapsed since the surgical procedure was performed; but as found in Einstein et al. [7] also, the type of surgical procedure influenced the time necessary for a woman to return to normal sexual function.

Conclusions
On the basis of the data collected through the herein discussed research, it was concluded that: the diagnosis of a premalignant and an early-malignant disease of the uterine cervix, and the related prospect of undergoing a surgical procedure, invokes a feeling of being unwell in a woman who had prior to being diagnosed felt completely healthy, and significantly impedes quality of life. The diagnostic-therapeutic management induces general anxiety, worry about preservation of the generative organ, apprehension about sexual intercourse, cessation of fertility, changes in the dynamics of the family and in the professional field, as well as changes in interpersonal relationships.

The quality of life of a woman treated surgically due to CIN3 and Ca IA is most often influenced by the radical nature of the surgical procedure. Conservative operations sparing the generative organ, such as cryonization and conization, were shown to not impede the woman's quality of life in the same way the more extensive procedures such as simple and radical hysterectomy would. There is also the anxiety surrounding the loss of fertility and the accompanying cessation of menstruation which is an inevitable side effect of a hysterectomy. It is probably also the reason why those patients who were candidates for less invasive treatments showed a lesser deterioration of self-image, particularly their view of being attractive, and also the reason for their quicker recovery of sexual health, as well as their improved total recovery and return to household, professional and social activities.

Return to general well-being after surgical treatment due to CIN3 and Ca IA is hampered and prolonged in women with disrupted emotional states and elevated level of anxiety related to the diagnosis of a neoplasm and suggested surgical treatment. A productive conversation between the doctor and the patient, ensuring that there is mutual respect and understanding regarding the nature of the disease, possibility of recovery, the type and extensiveness of suggested surgical procedure, which also takes into consideration the woman's emotional state, significantly lowers the level of anxiety which can cause delays in recuperation, and ultimately assists the patient in reconciling herself to the diagnosis and the suggested treatment.

A good family structure and a functional spousal relationship ensures that a patient who is diagnosed with a malignant disease will have significantly reduced levels of anxiety related to the diagnostic-therapeutic management, particularly during the most difficult period of clinical hospitalization: the first few days of the patient's stay in the clinic and the waiting time for the surgical procedure.

References