ЗНАЧАЈ ОПЕРАТИВНЕ ХИСТЕРОСКОПИЈЕ У ТРЕТМАНУ ПАТОЛОГИЈЕ КАВУМА УТЕРУСА КОД ИНФЕРТИЛНИХ ПАЦИЈЕНТКИНА

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Sažetak: UVOD: Prema definiciji Svetske zdrastvene organizacije (WHO) o neplodonosti para govorimo onda kada se i pored redovnog nezaštićenog odnosa u toku jedne godine ne dogodi trudnoća. Jedan od razloga steriliteta su urođene i stečene anomalije materice. Najbolja vizuelizacija unutrašnjosti materice se radi histeroskopski. Histeroskopija je minimalno invazivna hirurška procedura koja omogućava dijagnostiku i otklanjanje urođenih, ali i stečenih patoloških promena u šuplji materice. Kod infertilnih pacijentkinja učestalost anomalija je veća i kreće se od 3-6%, a kod habitualnih pobačaja 5-10%. Cilj rada je bio da se proceni uspeh operativne video-histeroskopije u tretmanu patoloških promena kavuma uterusa usled pojave mioma uterusa kod infertilnih pacijentkinja, na osnovu broja recidiva u prvih šest meseci posle operacije i broja intraoperativnih i postoperativnih komplikacija. MATERIJAL I METODE: Ispitivanjem je obuhvaćeno 200 infertilnih pacijentkinja do 40 godina starosti kod kojih je urađena operativna histeroskopija zbog dijagnostisanih mioma u kavumu uterusa. Pacijentkinje su operisane na odeljenju steriliteta u Ginekološko-akušerskoj klinici „Народни Фронт” u Beogradu. Od patoloških promena kavuma uterusa histeroskopski su odstranjeni submukozni miomi materice tip 0 i tip I. REZULTATI: Histeroskopski su najčešće resecirani submukozni miomi veličine od 21-25 mm, koji su bili lokalizovani i na zadnjem zidu korpusa uterusa. Ne postoji statistički značajna razlika u veličini submukoznih mioma između pacijentkinja sa primarnim sterilitetom i pacijentkinja sa sekundarnim sterilitetom (U=76,000; p>0.05). Nađena je visoko statistički značajna korrelacija starosnih grupa i tipa steriliteta uz umerenu jačinu povezanosti varijabli (r=0,408; p<0,001), što nam ukazuje na značajno ćešću povezanost sekundarnog steriliteta i starije životne dobi pacijentkinja. Dužina trajanja steriliteta kod pacijentkinja sa primarnim sterilitetom je statistički značajno veća u odnosu na pacijentkinje sa sekundarnim sterilitetom (U=3907,5; p<0.05). Ne postoji značajna razlika u odnosu na pojedine lokalizacije submukoznih mioma između pacijentkinja sa primarnim sterilitetom i pacijentkinja sa sekundarnim sterilitetom (U=76,500; p>0.05). Komplikacije histeroskopske miomektomije se dele na intraoperativne i postoperativne. Ukupno je bilo komplikacija kod 3 pacijentkinje. Desile su se 2 intraoperativne komplikacije (1%) tokom histeroskopske operacije: perforacija uterusa i krvarenje sa mesta resekcije. Ukupno je bilo 1,5% komplikacija kod operisanih pacijentkinja. Prednosti histeroskopskog pristupa su kraća trajanja zahvata, bolja preglednost operativnog polja, veća preciznost zahvata, manja bolnost, manji morbiditet, izostanak rezova, brži oporavak i dostizanje radne sposobnosti. Ključne reči: infertilitet, histeroskopija, submukozi miom.

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THE IMPORTANCE OF OPERATIVE HYSEROTOSCOPY IN TREATING PATHOLOGIES OF THE UTERINE CAVITY IN INFERTILE PATIENTS

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Abstract: According to the definition of the World Health Organization (WHO), infertility is the inability of a sexually active, non-contracepting couple to achieve pregnancy in one year. One of the causes of sterility is inborn and acquired uterine anomalies. The best visualization of the inside of the uterus is achieved hysteroscopically. Hysteroscopy is a minimally invasive surgical procedure and has the greatest significance in the diagnosis and treatment of congenital anomalies of the uterus. It is possible to eliminate and correct most of the congenital anomalies of the uterus, and it also enables the removal of other pathological changes in the cavity of the uterus. The incidence of congenital uterine anomalies in general population is 0.1–3.5%. Infertile patients have a higher incidence of these anomalies which range from 3–6%, and 5–10% in habitual abortions. The study included 200 infertile patients up to 40 years of age, with performed surgical hysteroscopy due to diagnosed changes in the uterine cavity. The patients were operated at the Department of infertility of the Obstetrics and Gynecology Clinic "Narodni Front" in Belgrade, in 2013. and 2014. The following pathological changes of the uterine cavity, were hysteroscopically removed: submucosal fibroids type 0 and type I. The aim of this paper was to evaluate the success of operative hysteroscopy in the treatment of pathological changes of the uterine cavity in infertile patients, based on the number of relapses in the first six months upon surgery. Relapses occurred in 0.5% of patients during a six-month postoperative course. Complications during hysteroscopic operations were intraoperative and postoperative. There were 1.5% of overall complications in the participants.

Keywords: infertility, hysteroscopy, submucosal fibroids.

The paper presents the most significant results of the subspecialist paper “The importance of operative hysteroscopy in treating pathologies of the uterine cavity in infertile patients”, authored by Dr Aleksandar P. Dević under the mentorship of Prof. Mladenko Vasiljević.

INTRODUCTION

Hysteroscopy is a minimally invasive surgical procedure which is of the greatest importance in the diagnosis and treatment of congenital uterine anomalies [1,2]. Hysteroscopic examination is usually performed in the first phase of the menstrual cycle [3]. Hysteroscopy can also be done regardless of the phase of the menstrual cycle if the patient has been previously prepared with oral contraceptives [4]. Hysteroscopy can be diagnostic and operative [5,6]. After hysteroscopic surgeries the fertility rate is significantly improved, as well as the overall percentage of pregnancies and live births, whereas the rate of miscarriages significantly decreases in these patients [7,8]. In our country, the total frequency of infertility is around 15%. The most frequent uterine causes of infertility are congenital anomalies of the uterus and uterine fibroids [9]. The significance of fibroids as the cause of infertility is even greater now due to an increasing number of women who decide to give birth later in life, at the time when uterine fibroids are more frequent [10,11]. The accepted parameters for fibroids being the cause of infertility are the following: subserosal fibroids that are ≥5 cm in diameter, intramural fibroids that are 2-3 cm in diameter and submucosal fibroids that are 1-2 cm in diameter [12]. It has been proven that the
U radu su predstavljeni najznačajniji rezultati subspecijalističkog rada pod nazivom "Značaj operativne histeroskopije u tretmanu patologije kavuma uteroša kod infertilnih pacijentkinja", autor dr Aleksandar P. Dević, mentor prof. dr Mladenko Vasiljević.

UVOD
Histeroskopija je minimalno invazivna hiruška procedura koja ima najveći značaj u dijagnostici i lečenju urođenih anomalija materice [1,2]. Histeroskopski pregled se uglavnom obavlja u prvoj fazi menstruacionog ciklusa [3]. Histeroskopija može da se izvodi i nezavisno od faze menstrualnog ciklusa ukoliko je pacijentkinja pripremljena oralnim hormonskim kontraceptivima [4]. Histeroskopija je interevencija koja može biti: dijagnostička i operativna [5,6]. Posle histeroskopskih operacija značajno se povećava procenat fertilitnosti, ukupni procenat trudnoća, procenat životodne dece, a značajno se smanjuje procenat spontanih pobačaja kod ovih žena [7,8]. U našoj zemlji ukupna učestalost infertiliteta se kreće oko 15%. Od uternih uzroka neplodnosti najčešći su: urođene anomalije materice i miomi materice [9]. Značaj mioma kao uzroka steriliteta dobija sve više na važnosti zbog sve većeg broja žena koje se odlučuju u kasnijim godinama da rade, tj. u periodu kada je češća pojava miomatoznih promena na uterusu [10,11]. Prihvaćeni parametri mioma kao uzroka steriliteta: subserozni miomi veličine ≥5 cm, intramuralni miomi veličine 2-3cm, submukozni miomi veličine 1-2cm [12]. Dokazano je da je procenat trudnoća i implantacija značajno smanjena kod pacijenata sa intramuralnim i submukoznim miomiima, čak i kada ne postoji deformitet kavuma [13]. Procenat trudnoća do kojih dolazi nakon miomektomije se kreće do 60% [14,15].

CILJ RADA
Cilj rada je bio da se proceni uspeh operativne video-histeroskopije u tretmanu patoloških promena kavuma uteroša izazvanih pojavom mioma kod infertilnih pacijentkinja, a na osnovu broja recidiva u prvih šest meseci posle operacije i broja intraoperativnih i postoperativnih komplikacija.

MATERIJAL I METODE
Ispitivanjem je obuhvaćeno 200 infertilnih pacijentkinja, do 40 godina starosti, kod kojih je zbog dijagnostikovanih mioma u kavum uteroša urađena operativna histeroskopija u cilju otklanjanja istih. Pacijentkinje su odabrane metodom slučajnog izbora, operisane tokom 2013. i 2014. godine u GAK Narodni front. Za izvođenje video-histeroskopije korišćen je rigidni protočni histeroskop dijametra 10,11 mm sa resektoskopom koji nosi bipolarnu elektrodu kojom se reseciraju patološke promene u šupljini materice [16,17]. Za distenziju šupljine materice korišćen je fiziološki rastvor njega 0,9% NaCl [18]. Od patoloških promena kavuma uteroša histeroskopski su odstranjivani: submukozni miomi materice tip 0 i tip II [19]. Uspeh histeroskopskih operacija je procenjen na osnovu broja recidiva koji su se javili u prvih 6 meseci posle operacije [20]. Kod svih pacijentkinja su analizirani sledeći parametri: životna dob, zanimanje, stepen stručne spreme, vrsta infertiliteta, dužina trajanja infertiliteta, postojanje ranijih pobačaja ili porođaja, alaz ultrazvuka, alaz histerosalpingografije, dijagnostikovani miomi kavumu uteroša. Odluka o izvođenju video-histeroskopske operacije donošena je na osnovu alaza ultrazvuka ili alaza histerosalpingografije [21]. Submukozne miome sme klasifikovati prema klasifikaciji Evropskog udruženja za histeroskopijsku intervenciju [0] (pedurlarni tj. potpuno smešten u šupljini materice), tip I (≤50% je lokalizovano u miometriju a ≥ 50% u šupljini materice) i tip II (≥50% je lokalizovano u miometriju a ≤50% u šupljini materice) [19,22,23]. Histeroskopske operacije su izvođene u prvoj fazi ciklusa između 6. i 12. dana ciklusa, u opštoj endotrahealnoj anesteziji, nakon adekvatne operativne pripreme pacijentkinja [21,16]. Dobijeni podaci su statistički obrađeni primenom metoda deskriptivne (srednja vrednost, standardna devijacija) i analitičke statistike (Hi kvadrat test, Mann Whitney U test i Studentov t test). Datoteka je formirana na računar Asus X% 1 RL, u programskom paketu SPSS 10.0 pomoću kog je izvršena analiza podataka. Dobijeni rezultati su prikazani grafički i tabelarno i upoređeni su sa rezultatima drugih autora. Na osnovu dobijenih rezultata doneseni su određeni zaključci.

REZULTATI
U ovom poglavlju su kroz tabele i grafikone prikazani najvažniji dobijeni rezultati ovog rada. Na grafikonu 1. je prikazana distribucija vrednosti, standardne devijacije) i analiza podataka.
percentage of pregnancies and implantations is significantly lower in patients with intramural and submucosal fibroids even when there is no cavum deformity [13]. The percentage of pregnancies upon myomectomy is up to 60% [14,15].

THE AIM
The aim of the paper was to assess the success of operative hysteroscopy in treating pathological changes of the uterine cavity caused by fibroids in infertile patients taking into consideration the number of relapses in the first six months upon surgery and the number of intraoperative and postoperative complications.

THE MATERIAL AND METHOD
The research included 200 infertile patients of up to 40 years of age who had been previously diagnosed with fibroids in the uterine cavity and thus had an operative hysteroscopy done for removing the fibroids. The patients were randomly selected and they were all operated on during 2013 and 2014 at the Obstetrics and gynecology hospital “Narodni front”. A rigid hysteroscope with an outer sheath 9 mm in diameter and a resectoscope containing a bipolar electrode for resecting pathological changes in the uterine cavity was used for performing hysteroscopy [16,17]. Saline solution (0.9% NaCl) was used for the distension of the uterine cavity [18]. The following pathological changes of the uterine cavity were removed: submucosal fibroids type 0 and type I [19]. The success of hysteroscopic surgeries was assessed according to the number of relapses in the first six months upon surgery [20]. In all the patients the following parameters were analyzed: age, occupation, education, the type of infertility, the duration of infertility, the presence of previous miscarriages or labors, ultrasound findings, hysterosalpingography findings, and diagnosed fibroids in the uterine cavity. The decision to perform a hysteroscopic surgery was made according to ultrasound or hysterosalpingography findings [21]. Submucosal fibroids were classified using the European Society for Hysteroscopy's classification as type 0 (pedunculated, i.e. completely located in the uterine cavity), type I (≤50% of the fibroid is located in the myometrium whereas its ≥ 50% is located in the uterine cavity) and type II (≥50% of the fibroid is located in the myometrium and its ≤50% is located in the uterine cavity) [19,22,23]. Hysteroscopic surgeries were performed in the first phase of the menstrual cycle between day 6 and day 12, under general endotracheal anesthesia and after adequate preoperative preparation of the patient [21,16]. The collected data were analyzed using the methods of descriptive statistics (the mean and standard deviation) and analytical statistics (Chi-square test, Mann-Whitney U test and Student’s t-test). A database was created on an ASUS X% 1 RL computer using the software package SPSS 10.0 for analyzing the data. The results obtained were presented using figures and tables and they were compared with the results obtained by other authors. According to the collected data certain conclusions were made.

RESULTS
In this part the most significant results are presented through tables and figures. Figure 1 shows the distribution of primary and secondary infertility according to the patient’s age. Figure 1 presents the percentage distribution of primary and secondary infertility according to the patient’s age.
Na grafikonu 1. je prikazana procentualna raspodela primarnog i sekundarnog steriliteta prema životnoj dobi pacijentkinja.

Grafikon 1. Procentualna raspodela primarnog i sekundarnog steriliteta prema životnoj dobi pacijentkinja.

Postoji visoko statistički značajna razlika u distribuciji grupa formiranih prema životnoj dobi, između pacijentkinja sa primarnim i pacijentkinja sa sekundarnim sterilitetom (U=2493,5; p<0,001). Takođe, nađena je visoko statistički značajna korelacija starosnih grupa i tipa steriliteta (r=0,408; p<0,001), što nam ukazuje na značajno ćešću povezanost sekundarnog steriliteta i starije životne dobi pacijentkinja.

Na grafikonu 2. je prikazana raspodela primarnog i sekundarnog steriliteta prema dužini trajanja steriliteta kod obe grupe pacijentkinja.

Grafikon 2. Procentualna raspodela primarnog i sekundarnog steriliteta prema dužini trajanja kod ispitanih pacijentkinja

Dužina trajanja steriliteta kod pacijentkinja sa primarnim sterilitetom je statistički značajno veća u odnosu na pacijentkinje sa sekundarnim sterilitetom, (U=3907,5; p<0,05). Takođe, nađena je statistički značajna korelacija dužine trajanja steriliteta i tipa steriliteta (r=0,151; p<0,05), što nam ukazuje na značajno ćešću povezanost primarnog steriliteta i dužeg trajanja steriliteta.

Na grafikonu 3. je prikazana raspodela veličine submukoznih mioma kod pacijentkinja sa primarnim i sekundarnim sterilitetom.
There is a large statistically significant difference in the distribution of groups formed according to age between the patients with primary infertility and those with secondary infertility ($U=2493.5; p<0.001$). Moreover, a statistically highly significant correlation was found between the age groups and the type of infertility ($r=0.408; p<0.001$), which indicates a significantly more frequent correlation between primary infertility and older patients.

Figure 2 presents the distribution of primary and secondary infertility according to the duration of infertility in both groups of patients.

The duration of infertility in patients with primary infertility is statistically significantly longer when compared to the patients with secondary infertility, ($U=3907.5; p<0.05$). Besides, a statistically significant correlation was found between the duration of infertility and the type of infertility ($r=0.151; p<0.05$), which indicates a significantly more frequent correlation between primary infertility and the duration of infertility.

Figure 3 presents the distribution of the size of submucosal fibroids in patients with primary and secondary infertility.
Grafikon 3. Procentualna raspodela veličine submukoznih mioma u pacijentkinja sa primarnim i sekundarnim sterilitetom

Ne postoji statistički značajna razlika u veličini submukoznih mioma između pacijentkinja sa primarnim sterilitetom i pacijentkinja sa sekundarnim sterilitetom (U=76,000; p>0.05).

Grafikon 4. Procentualna raspodela lokalizacije submukoznog mioma kod pacijentkinja sa primarnim i sekundarnim sterilitetom

Na grafikonu 4. je prikazana raspodela submukoznih mioma prema lokalizaciji u uterusu kod pacijentkinja sa primarnim sekundarnim sterilitetom.

U tabeli 1. su prikazane najčešće komplikacije koje su se dešavale tokom histeroskopske operacije.
Figure 3. Percentage distribution of the size of submucosal fibroids in patients with primary and secondary infertility.

There is no statistically significant difference in the size of submucosal fibroids between the patients with primary infertility and those with secondary infertility (U=76,000; p>0.05).

Figure 4 presents the distribution of submucosal fibroids according to the location in the uterus in patients with primary and secondary infertility.

Figure 4. Percentage distribution of the location of submucosal fibroids in patients with primary and secondary infertility.

There is no statistically significant difference between the patients with primary infertility and those with secondary infertility concerning certain locations of submucosal fibroids (U=76,500; p>0.05).

Table 1 shows the most frequent complications that occurred during hysteroscopic surgeries.

Table 1. Intraoperative complications of hysteroscopic surgeries

| Intraoperative complications | Number and percentage of patients |
|-----------------------------|----------------------------------|
|                            | N      | %       |

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Tabela 1. Intraoperativne komplikacije pri histeroskopskim operacijama

| Intraoperativne komplikacije | Broj i procenat pacijenata |
|------------------------------|-----------------------------|
| Krvarenje tokom operacije    | N 1 % 0.5                   |
| Perforacija uterusa          | N 1 % 0.5                   |
| Ukupno                       | N 2 % 1                     |

U tabeli 2. su prikazane najčešće postoperativne komplikacije nakon histeroskopske operacije.

Tabela 2. Postoperativne komplikacije pri histeroskopskim operacijama

| Komplikacija                  | Broj i procenat pacijenata |
|-------------------------------|-----------------------------|
| Stvaranje adhezija posle operacije | N 1 % 0.5                  |
| Ukupno                        | N 1 % 0.5                   |

U tabeli 3. je prikazana učestalost recidiva šest meseci nakon histeroskopske operacije mioma.

Tabela 3. Učestalost recidiva šest meseci nakon histeroskopske miomektomije

| Komplikacija                  | Broj i procenat pacijenata |
|-------------------------------|-----------------------------|
| Miomektomija                 | N 1 % 0.5                   |

Nakon šest meseci od histeroskopske hirurške miomektomije došlo je do pojave recidiva kod jedne pacijentkinje, p>0.05.

DISKUSIJA

Posmatrajući vrstu infertiliteta u odnosu na životnu dob naših ispitivanih pacijentkinja, našli smo da je primarni infertilitet bio približno podjednako zastupljen kod pacijentkinja životne dobi od 25 do 30 godina i onih životne dobi od 31 do 35 godina, dok je sekundarni infertilitet najčešće bio zastupljen kod pacijentkinja životne dobi od 36 do 40 godina. Primarni infertilitet je kod najvećeg broja naših pacijentkinja trajao 3-4 godine, a sekundarni infertilitet 1-2 godine. Transvaginalni UZ (TVUZ) pokazuje tačnost u dijagnostici mioma uterusa [23,24]. Uređan nalaz je nađen kod 10,6% pacijentkinja. Ne postoji statistički značajna razlika u odnosu na pojedine lokalizacije submukoznih mioma uterusa između pacijentkinja sa primarnim i sekundarnim infertilitetom, kao što ne postoji značajna razlika u veličini submukoznih mioma između ove dve grupe pacijentkinja [25]. Submukozni miomi su bili zastupljeni u 12,12% naših pacijentkinja sa primarnim infertilitetom i u 14,08% pacijentkinja sa sekundarnim infertilitetom. Veličina mioma kretala od 21 do 25mm i kod pacijentkinja sa primarnim infertilitetom i sa sekundarnim infertilitetom. I drugi autori u svom ispitivanju navode da je prosečna veličina submukoznih mioma kod pacijentkinja koje su podvrgnute histeroskopskoj miomektomiji bila 2,1 cm [25,26]. Većina autora se slaže da se histeroskopskim putem mogu odstranjivati tip 0i tip 1 submukozni miomi veličine do 6 cm i tip 2 submukozni miomi veličine do 4 cm [20,25,26]. U pokušaju da da odgovor na pitanje da li veličina i lokalizacija submukoznih mioma utiče na reproduktivni ishod vršeno je poredenje...
Bleeding during surgery | 1 | 0.5
---|---|---
Uterine perforation | 1 | 0.5
In total | 2 | 1

Table 2 presents the most frequent postoperative complications of hysteroscopic surgeries.

Table 2. Postoperative complications of hysteroscopic surgeries.

| N | % |
|---|---|
| Creating adhesions after surgery | 1 | 0.5 |
| In total | 1 | 0.5 |

Table 3 presents the frequency of relapses in the first six months upon a hysteroscopic surgery of fibroids.

Table 3. The frequency of relapses six months after a hysteroscopic myomectomy

| Number and percentage of patients |
|---|---|
| Miomektomia | 1 | 0.5 |

Six months upon a hysteroscopic surgical myomectomy there was a relapse in one patient, p>0.05.

DISCUSSION

Observing the type of infertility in relation with the age of the examined patients, we found that primary infertility was approximately equally represented in patients of 25-30 years of age and those of 31-35 years of age, whereas secondary infertility was most often represented in patients of 36-40 years of age. In most of our patients, primary infertility lasted for 3-4 years, while secondary infertility lasted for 1-2 years. Transvaginal ultrasound is accurate in diagnosing uterine fibroids [23,24]. No abnormalities were found in 10.6% of the patients. There is no statistically significant difference when it comes to individual locations of submucosal fibroids between the patients with primary and secondary infertility and there is no significant difference concerning the size of submucosal fibroids between these two groups of patients [25].

Submucosal fibroids were present in 12.12% of our patients with primary infertility and in 14.08% of the patients with secondary infertility. The size of fibroids was between 21 and 25 mm both in the patients with primary infertility and those with secondary infertility. Other authors also stated that the average size of submucosal fibroids in patients who had undergone hysteroscopic myomectomy was 2.1 cm [25,26]. Most of the authors agree that type 0 and type I submucosal fibroids up to 6 cm in size and type II submucosal fibroids up to 4 cm in size can be removed hysteroscopically [20,25,26]. Trying to answer the question whether the size and location of submucosal fibroids affected the reproductive outcome, women with and without submucosal fibroids were compared and no significant difference was found in the birth rate which was 30.5% in women with fibroids and 33.7% in women without fibroids [15]. The largest meta-analysis to date by Sunkare et al. involved 11 different studies and it found that there was a 21% lower birth rate in the patients with submucosal fibroids with no distortion of the cavity compared to the patients with no fibroids [19,21].

In both groups of the patients submucosal fibroids were most commonly located on the dorsal wall of the uterine corpus, followed by the anterior wall of the uterus and the fundus of the uterus. Fibroids located in the uterine horns are more difficult to reach and remove and are thus connected with a greater risk of complications during surgery [16]. In all our participants resections of submucosal fibroids were performed in a single step. Other authors stated that they had done a complete resection of submucosal fibroids in 92.9% of cases and an incomplete resection in 7.1% of cases [27]. Complications during hysteroscopy can be intraoperative and postoperative. There were complications in three patients. When it comes to intraoperative complications, perforation of the uterus during dilation of the cervix occurred in one patient, and another patient developed
žena sa i bez submukoznih miroma i nije nađena značajna razlika u stopi porođaja koja je iznosila 30,5% za žene sa miomima i 33,7% za žene bez mioma [15]. Najveća metaanaliza na ovu temu do sada Sunkaresar. iz 11 različitih studija dobila je 21% manju stopu rođenja kod pacijentkinja sa submukoznim miomima bez distorzije kavuma u odnosu na pacijente bez prisustva mioma [19,21].

Najčešća lokalizacija submukoznog mioma kod naših pacijentkinja iz obe grupe bila je na zadnjem zidu korpusa uterusa, a zatim na prednjem zidu i u fundusu uterusa. Miomi smešteni u rogovima materice su teže dostupni za uklanjanje, pa su povezani sa većim rizikom od komplikacija pri njihovom uklanjanju [16]. Kod svih naših pacijentkinja resekcija submukoznih mioma urađena je u jednom aktu. Drugi autori navode da su kompletne resekcije submukoznih mioma uradile u 92,9% slučajeva, a kompletne resekcije u 7,1% slučajeva [27].

Komplikacije tokom histeroskopije su intraoperativne i postoperativne. Komplikacije su se javile kod ukupno 3 pacijentkinja. Od intraoperativnih komplikacija kod jedne pacijentkinje je došlo do perforacije uterusa tokom dilatacije cervikalnog kanala, a kod jedne pacijentkinje je došlo do krvrenja iz uterusa tokom resekcije mioma. Od postoperativnih komplikacija kod jedne pacijentkinje je došlo do stvaranja adhezija intraoperativno posle resekcije mioma. Kod 0,5% pacijentkinja je došlo do recidiva u okviru prvih šest meseci od operacije, recidiv submukoznog mioma se pojavio kod 1 pacijentkinje.

Drugi autori navode da je procenat intraoperativnih komplikacija oko 5,4%, a rizik od perforacije uterusa je naročito izražen u toku resekcije submukoznog mioma tipa 2 [16]. Ruptura uterusa u trudnoći i porođaju nakon histeroskopske miomektomije sreće se u 1% slučajeva [13]. Stopa trudnoće nakon histeroskopske miomektomije je bila 29,7% [14]. Stopa trudnoće je bila 40% ako je miom bio jedini uzrok infertiliteta, a u 33,3% ako je miom bio smešten potpuno u šupljinu materice [14].

ZAKLJUČAK

Video-histeroskopija predstavlja sigurnu i efikasnu endoskopsku proceduru za dijagnozu i hiruško uklanjanje submukoznih mioma kao jednog od faktora patoloških stanja šupljine materice. Submukozni miomi koji deformišu šupljinu materice smanjuju fertilitnu sposobnost žene. Histeroskopski su najčešće resecirani submukozni miomi tip 0 i tip 1 veličine od 21-25 mm, koji su bili lokalizovani na zadnjem zidu korpusa uterusa. Procenat intraoperatorivnih komplikacija bio je 1%. Kod jedne pacijentkinje je došlo do perforacije uterusa, a kod 1 do krvrenja iz uterusa. Procenat postoperatorivnih komplikacija bio je 0,5%. Kod 1 pacijentkinje je došlo do stvaranja intrauterinih priraslica nakon resekcije mioma. Procenat recidiva šest meseci od operacije je bio 0,5%, kod 1 pacijentkinje je došlo do recidiva submukoznog mioma. Pravilnim planiranjem i izvođenjem zahvata moguće je maksimalno smanjiti rizik od nastanka komplikacija. Prednosti histeroskopskog pristupa su kraće trajanje zahvata, veća preciznost zahvata, bolja preglednost operativnog polja, veća preciznost zahvata, manja bolnost, manji morbiditet, izostanak rezova, brži oporavak i dostizanje radne sposobnosti.

LITERATURA:
1. Koskas M, Mergui JL, Yazbeck C, Uzan S, Nizard J. Office hysteroscopy for infertility: a series of 557 consecutive cases. Obstetrics and gynecology international. 2010. dostupno na: https://www.hindawi.com/journals/ogi/2010/168096/
2. Patil SG, Bhute SB, Inamdar SA, Acharya NS, Shrivastava DS. Role of diagnostic hysteroscopy in abnormal uterine bleeding and its histopathologic correlation. Journal of gynecological endoscopy and surgery. 2009;1(2):98-104.
3. Munro MG, Critchley HO, Fraser IS, FIGO Menstrual Disorders Working Group. The FIGO classification of causes of abnormal uterine bleeding in the reproductive years. Fertility and sterility. 2011;95(7):2204-8.
4. Pasic RP, Levine RL. A Practical Manual of Hysteroscopy and Endometrial Ablation Techniques: A Clinical Cookbook. CRC Press; 2004. https://doi.org/10.3109/9780203640395
5. Munro MG, Christianson LA. Complications of hysteroscopic and uterine resectoscopic surgery. Clinical obstetrics and gynecology. 2015;58(4):765-97.
uterine bleeding during fibroid resection. Postoperative complications included adhesion formation after fibroid resection in one patient. In 0.5% of the patients there was a relapse in the first six months upon surgery, a relapse of submucosal fibroid occurred in one patient.

Other authors stated that the percentage of intraoperative complications was around 5.4% and that the risk of uterine perforation was particularly pronounced during resection of type II submucosal fibroids [16]. Uterine rupture during pregnancy and childbirth after hysterectomy was found in 1% of cases [13]. The pregnancy rate after a hysterectomy was 29.7% [14]. The pregnancy rate was 40% if the fibroid was the only cause of infertility and in 33.3% in it was completely located in the uterine cavity [14].

CONCLUSION

Hysteroscopy is a safe and efficient endoscopic procedure for diagnosis and surgical removal of submucosal fibroids as one of the factors causing pathological conditions of the uterine cavity. Submucosal fibroids which deform the uterine cavity reduce a woman's fertility. Submucosal fibroids type 0 and type I 21-25 mm in size located on the dorsal wall of the uterine corpus were most often resected using the hysteroscopic procedure. The percentage of intraoperative complications was 1%. One patient experienced perforation of the uterus and one patient had uterine bleeding. The percentage of postoperative complications was 0.5%. One patient experienced adhesion formation in the uterus after fibroid resection. The percentage of relapses six months upon surgery was 0.5% as one patient had a relapse of a submucosal fibroid. Through adequate planning and performance it is possible to minimize the risk of complications during hysteroscopic surgeries. Advantages of the hysteroscopic approach include a shorter procedure, a better observation of the cavity, a greater precision, less pain, lower morbidity, the absence of cuts, faster recovery and getting back to work sooner.

REFERENCES:

1. Koskas M, Mergui JL, Yazbeck C, Uzan S, Nizard J. Office hysteroscopy for infertility: a series of 557 consecutive cases. Obstetrics and gynecology international. 2010. Available from: https://www.hindawi.com/journals/og/2010/168096/

2. Patil SG, Bhide SB, Inamdar SA, Acharya NS, Shrivastava DS. Role of diagnostic hysteroscopy in abnormal uterine bleeding and its histopathologic correlation. Journal of gynecological endoscopy and surgery. 2009;1(2):98-104.

3. Munro MG, Critchley HO, Fraser IS. FIGO Menstrual Disorders Working Group. The FIGO classification of causes of abnormal uterine bleeding in the reproductive years. Fertility and sterility. 2011;95(7):2204-8.

4. Pasic RP, Levine RL. A Practical Manual of Hysteroscopy and Endometrial Ablation Techniques: A Clinical Cookbook. CRC Press; 2004. https://doi.org/10.3109/9780203640395

5. Munro MG, Christianson LA. Complications of hysteroscopic and uterine resectoscopic surgery. Clinical obstetrics and gynecology. 2015;58(4):765-97.

6. Kosmidis C, Pantos G, Efthimiadis G, Kouidihsuehk’ohsuehtsachih. 2002;17(4):242

7. Zhang Y, Hua KQ. Patients’ age, myoma size, myoma location, and interval between myomectomy and pregnancy may influence the pregnancy rate and live birth rate after myomectomy. Journal of Laparoendoscopic & Advanced Surgical Techniques. 2014;24(2):95-9.
16. Grimbizis GF, Camus M, Tarlatzis BC, Bontis JN, Devroye P. Clinical implications of uterine malformations and hysteroscopic treatment results. Human reproduction update. 2001;7(2):161-74.
17. Oppelt P, Renner SP, Brucker S, Strissel PL, Strick R, Oppelt PG, Doerr HG, Schott GE, Huckle J, Wallwiener D, Beckmann MW. The VCUAM [Vagina Cervix Uterus Adnex-associated Malformation] Classification: a new classification for genital malformations. Fertility and sterility. 2005;84(5):1493-7.
18. Cholkeri-Singh A, Sasaki KJ. Hysteroscopy for infertile women: a review. Journal of minimally invasive gynecology. 2015;22(3):353-62.
19. Sankara SK, Khairy M, El-Toukhy T, Khalaf Y, Coomarasamy A. The effect of intramural fibroids without uterine cavity involvement on the outcome of IVF treatment: a systematic review and meta-analysis. Human Reproduction. 2010;25(2):418-29.
20. Maheshwari A, Hamilton M, Bhattacharya S. Effect of female age on the diagnostic categories of infertility. Human reproduction. 2008;23(3):538-42.
21. Nasri MN, Sethell ME, Chard T. Transvaginal ultrasound for diagnosis of uterine malformations. BJOG: An International Journal of Obstetrics & Gynaecology. 1990;97(11):1043-5.
22. Mynbaev OA, Sparic R, Stark M, Mahvash A, Marinelli E, Zaami S, Tinelli A. The medical device applied to uterine fibroids morcellation: analysis of critical biological issues and drawbacks from a medical-legal perspective. Current pharmaceutical design. 2020;26(3):318-25.
23. Vitale SG, Ferrero S, Caruso S, Barra F, Marín-Buck A, Vilos GA, Vitagliano A, Török P, Cebiera M, Cianci A. Ulipristal acetate before hysteroscopic myomectomy: a systematic review. Obstetrical & gynecological survey. 2020;75(2):127-35.
24. Capezzuoli T, Vannuccini S, Fantappiè G, Orlandi G, Rizzello F, Coccia ME, Petraglia F. Ultrasound findings in infertile women with endometriosis: evidence of concomitant uterine disorders. Gynecological Endocrinology. 2020;36(9):808-12.
25. Phalivong P. The Effect of Myoma uteri on Infertility. Sriraj Medical Journal. 2020;72(5).
26. Stamenov GS, Vitale SG, Corte LD, Vilos GA, Parvanov DA, Nikolova DN, Ganeva RR, Haimovich S. Hysteroscopy and female infertility: a fresh look to a busy corner. Human Fertility. 2020:1-29.
27. Lasmar RB, Xinmei Z, Indman PD, Celeste RK, Sardo AD. Feasibility of a new system of classification of submucous myomas: a multicenter study. Fertility and sterility. 2011;95(6):2073-7.