

Značaj ultrasonografije u praćenju multiplih fibroadenoma dojke

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Importance of ultrasonography in follow-up of multiple breast fibroadenomas

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Sažetak

Uvod: Redovni ultrazvučni pregledi pomažu kod ranog otkrivanja i praćenja raznih oboljenja. Ultrasonografija (US) je od izuzetnog dijagnostičkog značaja mamografski „guste dojke“ sa dominacijom glandularnog tkiva, dok je kod tzv. „masnih dojki“ manje pouzdana. Koristi se da odredi solidnu ili cističnu prirodu lezije, često i tkivnu karakterizaciju, a doplerskom tehnikom i vaskularizaciju promene. Fibroadenomi su najzastupljeniji benigni tumori dojke žena svih uzrasta do menopauze, sa najvećom učestalošću između 15 i 25 godine života. Na US nalazu vidi se oštro ograničena, ređe kružna ili lobulirana hipoehogena promena, glatkih i ravnih kontura ujednačenih odjeka sa posteriornim pojačanjem i rubnim slabljenjem odjeka.

Prikaz slučaja: U radu je prikazana pacijentkinja uzrasta 21 godine kod koje su bile prisutne multiple promene u obe dojke (ukupno 25 tumorskih promena). U više navrata, unazad 5 godina, su rađeni ultrasonografski pregledi i u dva navrata magnetna rezonanca dojki. Histopatološkom verifikacijom je postavljena dijagnoza fibroadenoma. Kod pacijentkinje su u četiri navrata hirurški uklonjene najveće promene. Koji su dalji koraci? Da li su potrebne ponovne hirurške intervencije, i ako nisu, kako bi dalje trebalo pratiti pacijentkinju? Da li je poželjna ugradnja implantata u cilju estetske korekcije?

Zaključak: Ultrasonografija je veoma značajna i važna metoda u praćenju promena na dojkama. Kao dopunske metode koriste se mamografija i magnetna rezonanca. Prema ekspertskom mišljenju radiologa za bolesti dojke, ultrasonografski pregledi na šest meseci i pregledi MR indikuju potrebu za hirurškom intervencijom, posebno ako su uočene nove promene ili brzo rastuće postojeće promene.

Ključne reči: ultrasonografija, dojka, fibroadenomi, mlada osoba

Abstract

Introduction: Regular ultrasonographic check-ups help in early detection and follow-up of different diseases. Ultrasonography (US) is of the utmost diagnostic importance for mammographically „dense breasts“, where glandular tissue is predominant, while in so-called „fat breasts“ it is less reliable. It is used to determine the solid or cystic nature of a lesion, often tissue characterization, and the Doppler technique could reveal vascularization characteristics of the mass. Fibroadenomas are the most common benign breast tumors in women of all ages until menopause, with the highest incidence between 15 and 25 years of age. The US detects distinctly circumscribed, rarely round or lobular, hypoechoic masses with smooth and flat contours, uniform echoes with posterior augmentation, and marginal echo fading.

Case report: We presented a female patient aged 21, who had multiple lesions in both breasts (25 lesions in total). Ultrasonographic exams were performed multiple times, in the last 5 years, and magnetic resonance (NMR) was done twice. Histopathologic verification diagnosed fibroadenomas. The biggest masses were surgically removed four times in this patient. What are the next steps? Are surgical interventions needed again, and if not how should she be followed up in the future? Is the implant insertion eligible for the sake of esthetic correction?

Conclusion: Ultrasonography is a very significant and important method of follow-up of breast lesions. Mammography and magnetic resonance are used as complementary methods. According to a radiologist's expert opinions on breast diseases, ultrasonographic exams every six months and NMR may indicate the need for surgical intervention, especially if new lesions are detected or existing lesions are growing fast.

Keywords: ultrasonography, breast, fibroadenoma, young person

Uvod

Poznato je da se mnoge bolesti mogu sprečiti ili izlečiti ukoliko se otkriju na vreme. Kada se bolest blagovremeno dijagnostikuje, u najvećem broju slučajeva su i šanse za izlječenje veće. Redovni ultrazvučni pregledi pomažu kod ranog otkrivanja i praćenja raznih oboljenja. Njima je moguće utvrditi promene u strukturi, veličini i položaju organa, i na taj način pomažu u diferencijalnoj dijagnozi benignih od malignih tumorskih promena.

Dojka je zbog svog položaja zahvalan organ za ultrazvučni pregled, ali iziskuje iskustvo i stručnost lekara koji ga obavlja. Savremena dijagnostika oboljenja dojke ne koristi više mamografiju kao samostalnu i suverenu metodu, jer se nije pokazala dovoljno senzitivna i specifična. Zato se nadopunjuje drugim vizuelnim tehnikama od kojih je ultrazvučna prihvaćena kao dopunska. Ultrasonografija (US) je od izuzetnog dijagnostičkog značaja mamografski „guste dojke“ sa prevladavanjem glandularnog tkiva, dok je kod tzv. „masnih dojki“ manje pouzdana. Koristi se da odredi solidnu ili cističnu prirodu promene, često i tkivnu karakterizaciju, a doplerskom tehnikom i vaskularizaciju promene^{1,2,3,4}.

Fibroadenomi su najzastupljeniji benigni tumori dojke žena svih uzrasta do menopauze sa najvećom učestalošću između 15. i 25. godine života. Po pravilu se ne pojavljuju niti ispoljavaju rast kod žena posle menopauze, izuzev kod onih koje su pod supstitucionom hormonskom terapijom. Nastaju umnožavanjem žlezdanog i fibroznog tkiva. Fibroadenomi su ograničene promene, kružnog, ovalnog ili lobuliranog oblika, pokretne prema okolini. Pretpostavlja se da rastu u prvih 12 meseci od nastanka, nakon čega dostižu konačnu veličinu i ostaju nepromenjeni godinama. Dijagnoza se postavlja US pregledom, kojim se solidna mekotkivna promena lako razlikuje od cistične. Često su multipli i mogu da budu bilateralni^{5,6,7}. Većina fibroadenoma se uočava kao solitarna, vidljiva masa, ali se kao multipli mogu videti kod 15–20% pacijentkinja sa prosečno 3–4 promene po dojci. Skoro dve trećine promena nalazi se u spoljašnjim kvadrantima dojki⁸. Na US nalazu vidi se oštro ograničena, ređe kružna ili lobulirana hipoehogena promena, glatkih i ravnih kontura ujednačenih odjeka sa posteriornim pojačanjem i rubnim slabljenjem odjeka (Slika 1. i 2). Biopsija se preporučuje kod žena starijih od 40 godina, kod kojih se fibroadenom pojavljuje kao novonastala promena i kod onih promena koje imaju uznapredovan rast. Kao dopunske dijagnostičke procedure rade se mamografija i magnetna rezonanca (MR) dojki.

Introduction

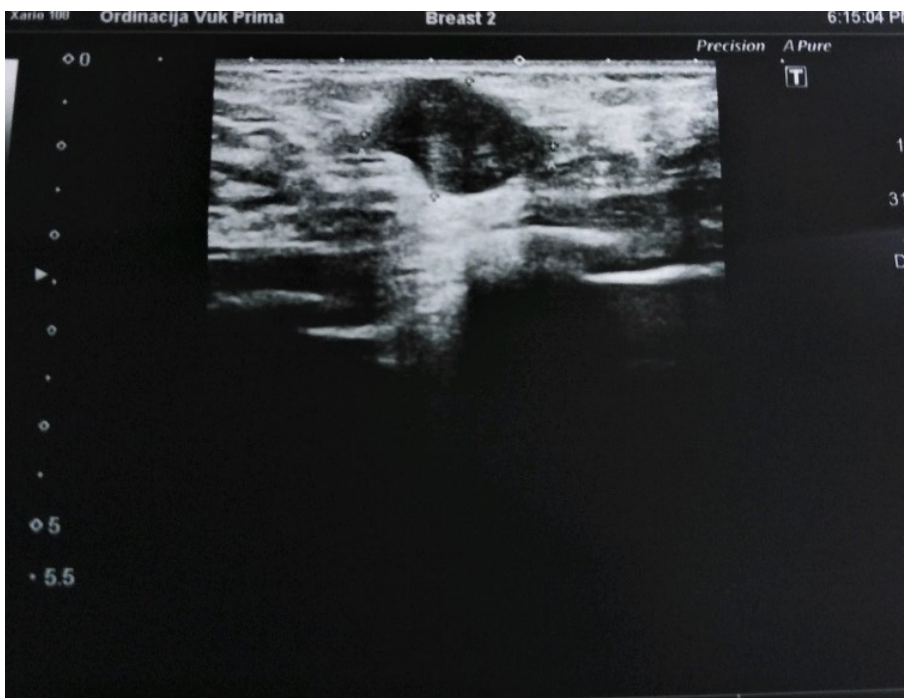
It's widely known that many diseases can be prevented or cured if they are detected on time. When a disease is diagnosed on time, the chance of healing is higher in the majority of cases. Regular ultrasonographic exams help in the early detection and follow-up of many diseases. It may detect structural changes, measure and the position of the organ, and thus it helps make a more precise distinction between benign and malignant tumor masses.

A breast, due to its position, is a convenient organ for ultrasonographic examination but it requires the experience and expertise of the examiner. Modern diagnostics of breast diseases dooen't use mammography anymore as the only and sovereign method because it didn't prove reliable and specific enough. Therefore, it's supplemented with other visual techniques, of whom ultrasonography is accepted as supplemental. Ultrasonography (US) is of the utmost diagnostic importance for mammographically „dense breasts“, where glandular tissue prevails, while in so-called „fat breasts“ is less reliable. It is used to determine whether a lesion is solid or cystic, often character of the tissue and the Doppler technique can detect the vascularization of the lesion^{1,2,3,4}.

Fibroadenomas are the most common benign breast tumors in women of all ages until menopause, with the highest incidence between 15 and 25 years of age. Almost as a rule, they do not grow in women after menopause, except in those using supplemental hormone therapy. They originate from reproduction of glandular and fibrous tissue. Fibroadenomas are circumscribed lesions, of round, oval, or lobular shape, movable in their surrounding. It is believed, that they grow in the first twelve months from the onset and then reach their final size and they can stay unchanged for years. They are diagnosed by US exam which can differentiate solid, soft tissue lesions from cystic ones. They are often multiple and may also be bilateral^{5,6,7}. The majority of fibroadenomas are detected as solitary, visible masses but also as multiple ones in 15–20% of patients, with 3–4 lesions, on average, per breast. Almost two-thirds of lesions are found in the upper external breast quadrants⁸. On the US exam they present as clearly circumscribed, rarely round or lobular hypoechogenic lesions, with smooth and plane contours of uniform echoes with posterior augmentation and marginal echo fading (Pictures 1. and 2.). Biopsy is recommended in women over 40 in whom fibroadenomas are novel formations and in lesions growing fast. Mammography and NMR are supplemental diagnostic procedures for breast lesion diagnosis.



Slika 1/Pictures 1



Slika 2/Pictures 2

Uzrok i etiologija nastanka fibroadenoma još nije razjašnjena. Stromalne i epitelne ćelije tkiva dojke sadrže receptore za estrogen i progesteron⁹. Moguća uloga uzimanja oralnih kontraceptiva, poremećaj nivoa estrogena, preterana osetljivost tkiva dojke na estrogene, način ishrane i genetska predodređenost su navedeni kao mogući uzroci^{10,11,12}. Rizik od maligne transformacije je nizak kod multiplih fibroadenoma, pa se epitelijalna hiperplazija, atipična hiperplazija, invazivni i "in situ" duktalni i lobularni karcinom retko vide^{5,6,7}. Posebna pažnja i praćenje se zahteva kod pacijenata sa pozitivnom porodičnom anamnezom na karcinom dojki i/ili karcinom jajnika.⁶

Većina fibroadenoma ne zahteva hirurško lečenje, već samo redovno praćenje. Ukoliko se radi o promeni koja ima karakteristike fibroadenoma i citološki potvrđenu dijagnozu, preporučuje se praćenje promene rasta na 6, 12 i 24 meseca. Ukoliko se u tom vremenskom intervalu promena izrazito uveća, preporučuje se uklanjanje tumorske promene i utvrđivanje PH vrednosti. Osim klasičnog hirurškog odstranjenja, primenjuju se i manje invazivne procedure: vakuum biopsija, krioblacija i terapija ultrazvučnim talasima¹³.

Cilj rada

Ukazati na značaj ultrasonografije u dijagnostici i praćenju promena u dojkama u cilju procene adekvatnog tretmana.

Prikaz slučaja

U radu je prikazana pacijentkinja uzrasta 21 godinu kod koje su bile prisutne multiple promene u obe dojke (ukupno 25 tumorskih promena, 14 u desnoj i 11 u levoj). Najveća promena bila je promera 40 x 26 mm u desnoj i 33 x 17 mm u levoj dojci, BI-RADS:DD3 LD3 (Prilog 1). Nije imala pozitivnu porodičnu anamnezu za karcinom dojke i karcinom jajnika. Pacijentkinja nikada nije bila ni na jednoj vrsti hormonske terapije, niti je bila trudna. Ciklusi su joj bili redovni i na ginekološkom pregledu je imala uredan nalaz. U fizikalnom nalazu obe dojke opipane su pokretne tumorske mase, čvrste i jasno ograničene.

Pacijentkinja je prvi put primetila promene u dojkama u svojoj šesnaestoj godini (februara 2015. godine), i ubrzo je ultrazvučnim pregledom postavljena sumnja na fibroadenome. Tada su obostrano viđene pojedinačne promene koje su iste godine hirurški uklonjene i histopatološki potvrdile dijagnozu fibroadenoma. U daljem praćenju pacijentkinje u više navrata su rađeni ultrasonografski pregledi i u dva navrata magnetna rezonanca dojki. Genetske analize na mutaciju BRCA-1 i BRCA-2 gena su bile negativne. Odstranjenje najvećih promena urađeno je 2017. godine, dok su manje promene praćene redovnim ultrazvučnim kontrolnim

The cause of fibroadenoma onset is still unclear. The stromal and epithelial cells of breast tissue contain receptors for estrogen and progesterone⁹. The possible role of oral contraceptive consumption, estrogen level disorder, the extreme sensitivity of the breast tissue to estrogen, diet, and genetic predisposition are some of the possible causes^{10,11,12}. The risk of malignant transformation is low in multiple fibroadenomas, so epithelial hyperplasia, atypical hyperplasia, invasive and "in situ" ductal and lobular carcinomas are rarely noticed^{5,6,7}. Special attention and follow-up are needed in patients with a positive family history of breast cancer and/or ovarian cancer.⁶

The majority of fibroadenomas do not require surgical treatment but merely regular follow-up. If the lesion has the characteristics of fibroadenoma and cytologically confirmed diagnosis the follow-up of the growth change is recommended every 6, 12, and 24 months. If in this time span, the lesion extremely enhances, the removal of the lesion is recommended, as well as PH verification. Aside from standard surgical removal, less invasive procedures are performed: vacuum biopsy, cryoablation and ultrasound wave therapy¹³.

Objective

Point out the importance of ultrasonography in diagnosing and follow-up of breast lesions in order to apply proper treatment.

Case report

We presented a female patient, 21 years of age, with multiple lesions in both breasts (25 tumor lesions in total, 14 in the right and 11 in the left). The largest lesion was 40 x 26 mm in the right and 33 x 17 mm in the left breast, BI-RADS: RB3 LB3 (Appendix 1). She had no family history of breast and ovarian cancer. The patient was never on any sort of hormonal therapy, nor was she pregnant. Her periods were regular and her gynecological exam normal. Physical examination of both breasts detected movable tumor masses, solid, and circumscribed.

She first noticed the breast masses when she was sixteen (February 2015), and very soon, with the help of ultrasound, fibroadenomas were suspected. Solitary lesions were seen in both breasts and they were surgically removed the same year and later histopathological examination confirmed the diagnosis of fibroadenomas. In the further follow-up, multiple ultrasonographic breast exams were performed and twice breast NMR. Genetic tests for BRCA-1 and BRCA-2 gene mutations were negative. The removal of the largest lesions was performed in 2017 while smaller lesions were followed-up with regular ultrasonographic exams. In December 2021, the patient had the third surgical procedure when ultra-

pregledima. Decembra 2021. godine pacijentkinja je imala treći hirurški zahvat kada je ultrasonografijom utvrđeno 17 promena u desnoj dojci i 14 u levoj, BI-RADS:DD3 LD3 (Prilog 2). Poslednji, četvrti operativni zahvat bio je u martu 2022. godine kada je uklonjeno 10 većih promena u obe dojke: preostalih 7 promena u desnoj i 4 promene u levoj dojci su ostavljene za dalje US praćenje, BI-RADS:DD3 LD2 (Prilog 3).

sonography detected 17 lesions in the right breast and 14 in the left, BI-RADS: RB3 LB3 (Appendix 2). The last, fourth procedure was performed in March 2022 when 10 large lesions, in both breasts, were removed: the remaining 7 lesions in the right and 4 lesions in the left breast were left for further US follow-up, BI-RADS: RB3 LB2 (Appendix 3).

Dijagnoza

- Fibroadenoma mammae bil. multiplices
- BI-RADS: DD3 LD3

Nalaz i mišljenje

EHO PREGLED OBE DOJKE:

Stanje nakon parcijalne resekcije obe dojke, prisutne su postoperativne sekvele.
U okviru obostrane fibrocistične delom adenomatozne displazije, obostrano u dojčkama viđi se ukupno 25 ovalnih, lako lobuliranih, solidnih Tu promena, ehokarakteristika fibroadenoma, i to:

u desnoj dojci:

1. paraareolarno u GMK, dimenzija 17x14 mm,
2. i 3. u GLK ka spoju LK desne dojke, dva jedan uz drugi, veličine 16x12 i 12x11 mm,
4. i 5. u GLK, veličine 15x11 mm i dimenzija 15x9 mm
6. i 7. u GLK ka aksili, dimenzija 28x13 mm i veličine 12x7 mm,
8. i 9. u GLK ka aksili i prema spoju LK, veličine 22x13 i 21x10 mm,
10. u DLK ka spoju LK, veličine 21x11 mm,
11. u DMK ka spoju DK, dimenzija 17x12 mm,
12. na spoju DK, promera do 9 mm,
13. retroareolarno u GLK, veličine 12x8 mm, i
14. u DMK, dimenzija 40x26 mm,

dok se u levoj dojci nalaze:

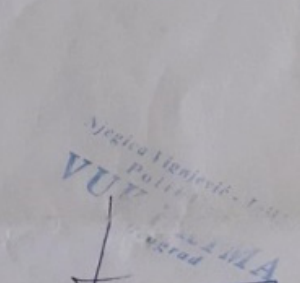
1. paraareolarno u GMK, dimenzija 19x14 mm,
2. paraareolarno u GLK, veličine 23x15 mm,
3. u GLK, dimenzija 17x9 mm,
4. u GLK ka aksili, dimenzija 19x12 mm,
- 5 i 6. na spoju LK, veličine 21x15 mm i dijametra 7 mm,
7. na spoju LK ka aksili, veličine 21x14 mm,
8. u DLK, dimenzija 21x12 mm,
9. paraareolarno u DLK, dimenzija 18x11 mm,
10. na spoju DK, dimenzija 33x17 mm, i
11. u DMK, veličine 9x8 mm.

Makrocistične formacije se u dojčkama ne izdvajaju.
U aksilama prisutne lgl, reaktivnog izgleda, promera do 15 mm.

Kontrola

Savetuje se konsultacija hirurga.

Prilog 1/Appendix 1



Dijagnoza

- Fibroadenoma mammae bil. multiplices
- BI-RADS: DD3 LD3

Nalaz i mišljenje

EHO PREGLED OBE DOJKE:

Stanje nakon parcijalne resekcije obe dojke, prisutne su postoperativne sekvele. U okviru obostrane fibrocistične delom adenomatozne displazije, obostrano u dojkama ovalnih, lako lobuliranih, solidnih Tu promena, ehokarakteristika fibroadenoma, i to, u desnoj dojci,

1. paraareolarno u GMK, dimenzija 41x25 mm,
2. i 3. u GLK ka spoju LK desne dojke, dva jedan uz drugi, veličine 16x14 i 14x12 mm,
- 4., 5. i 6. u GLK, veličine 15x15 mm, dimenzija 30x16 mm i veličine 34x18 mm,
7. i 8. u GLK ka aksili, dimenzija 28x13 mm i veličine 12x7 mm,
9. i 10. u GLK ka aksili i prema spoju LK, veličine 20x10 i 9x4 mm,
11. u DLK ka spoju LK, veličine 21x14 mm,
12. i 13. u DMK ka sulkusu, dimenzija 17x12 mm i veličine 23x13,
14. retroareolarno u GLK ka spoju GK, veličine 9x5 mm,
15. supraareolarno na spoju GK, dimenzija 17x9 mm,
16. na spoju GK, veličine 18x11 mm,
17. u DMK, dimenzija 43x26 mm,

dok se u levoj dojci nalaze,

1. paraareolarno u GMK, dimenzija 19x14 mm,
2. paraareolarno u GLK, veličine 23x15 mm,
3. u GLK, dimenzija 17x9 mm,
- 4., 5. i 6. u GLK ka aksili, dimenzija 19x12 mm, veličine 20x11 i promera do 4 mm,
7. i 8. na spoju LK, veličine 22x15 mm i dimenzija 9x5 mm,
9. i 10. u DLK, dimenzija 21x12 mm i veličine 6x5 mm,
11. paraareolarno u DLK, dimenzija 20x11 mm,
12. na spoju DK, dimenzija 37x17 mm, i
13. i 14. u DMK, veličine 22x12 mm i dimenzija 16x13 mm.

Makrocistične formacije se u dojkama ne izdvajaju. U aksilama prisutne lgl, reaktivnog izgleda, promera do 15 mm.

Kontrola

Savetuje se konsultacija hirurga.

Prilog 2/Appendix 2

Dijagnoza

- Fibroadenoma mammae bil. multiplices
- BI-RADS: DD3 LD2

Nalaz i mišljenje

EHO PREGLED OBE DOJKE:

Stanje nakon parcijalne resekcije obe dojke, prisutne su postoperativne sekvele. U okviru obostrane fibrocistične delom adenomatozne displazije, obostrano u dojkama vidi se ukupno 11 ovalnih, lako lobuliranih, solidnih Tu promena, ehokarakteristika fibroadenoma, i to, u desnoj dojci,

1. supraareolarno na spoju GK, dimenzija 7x5 mm,
2. paraareolarno u GLK, veličine 12x8 mm,
3. u GLK, dimenzija 26x12 mm,
4. paraareolarno na spoju LK, veličine 6x4 mm,
5. u GLK ka desnoj aksili, dimenzija 12x7 mm,
6. u GLK ka desnoj aksili i spoju LK, veličine 27x13 mm i
7. na spoju LK, dimenzija 6x4 mm,

dok se u levoj dojci nalaze,

1. u GMK, veličine 11x6 mm,
2. i 3. u GLK, dva jedan pored drugog, dimenzija 9x5 mm i veličine 6x3 mm,
4. u DLK, dimenzija 6x4 mm,

Makrocistične formacije se u dojkama ne izdvajaju. Na spoju LK leve dojke diferencira se intramamarna lgl, dijametra do 8 mm. U aksilama prisutne lgl, reaktivnog izgleda, promera do 15 mm.

Kontrola

Savetuje se konsultacija hirurga.

Prilog 3/Appendix 3

VUK
Vještačenje - Jutje PR
Poliklinika

S obzirom da se radi o mladoj osobi, svaki odlazak kod lekara na kontrolu, a posebno operativni zahvat je bio veliki stres za nju, a svaki recidiv bolesti dodatni gubitak samopouzdanja i pad entuzijazma, koji su ometali njeno svakodnevno funkcionisanje. Usredsređenost na bolest i opterećenje bolešću dovelo je do strahova vezanih za tok bolesti, ali i psihičkog opterećenja zbog same estetike dojke, jer su postoperativni ožiljci remetili normalan oblik dojke. Pacijentkinja je sve vreme imala punu podršku porodice, a sa izabranim lekarom se često savetovala u vezi prevazilaženja trenutnih poteškoća.

Koji su dalji koraci? Da li su potrebni ponovni hirurški zahvati, i ako nisu, kako bi dalje trebalo pratiti pacijentkinju? Da li je poželjna ugradnja implantata u cilju estetske korekcije?

Diskusija

Ultrasonografija je bezbolna i neinvazivna metoda. Poslednjih decenija primena ultrasonografije u utvrđivanju i praćenju mnogih bolesti dobila je na značaju. Ima primenu i u vođenju biopsija i/ili drugih terapijskih interventivnih procedura. Senzitivnost pregleda je 68–98%, a specifičnost u razlikovanju promena solidno vs. cistično iznosi preko 98%^{14,15}. Ultrazvuk dojki se obavlja u ležećem stavu sa rukama ispod glave, a po potrebi i u bočnom dekubitusu. Koriste se sonde viših frekvencija, od 7,5 do 13 MHz. Dojka se ispituje skenerom u celini, i to: paralelnim skenovima odozgo nadole, radialnim skenovima u smeru skazaljke na satu od centra koji odgovara bradavici dojke i skenovima u istoj ravni, sa pregledima prvo gornjeg spoljnog kvadranta, gornjeg unutrašnjeg, a zatim oba donja. Pregled se završava skeniranjem pazušne jame, a zatim supra i infraklavikularne lože i retrosternalnog prostora.

Fibroadenomi su česti benigni tumori dojki kod mladih žena koji imaju nizak rizik za malignu transformaciju (0,03–0,1%) i nešto je veća u slučaju multiplih fibroadenoma, kao i kod “džinovskih fibroadenoma“ koji prelaze veličinu od 4 cm^{5,6,7}. Bitno je kliničko praćenje, redovni US pregledi, po potrebi dopuna dijagnostike u smislu mamografije i MR dojki i hirurško lečenje.

Ultrazvukom se mogu pratiti veličina, oblik, konture fibroadenoma, ehostruktura, ehotekstura, posteriorni fenomeni, pokretljivost i stišljivost, kao i prokrvljenost. Promene veće od 20% za šestomesečni period praćenja, bez obzira na godine starosti, su nagoveštaj za hirurško odstranjenje, vakuum asistiranu biopsiju, radiofrekventnu ablaciju, laser ablaciju¹⁶. Nепrekidne hirurške intervencije tokom vremena mogu dovesti do psihološke patnje, posebno kod mladih⁵.

Pasta i sar. su prikazali slučaj dvadesetdvoletnje devojke koja se podvrgla hirurškim tretmanima u više navrata. Autori predlažu periodične radiološke preglede, a hirurški tretman bi trebalo ostaviti samo za brzorastuće promene¹⁷.

Since she is a young person, every doctor's follow-up visit, and especially the surgical procedure was a huge stress for her, and every reappearance of the disease added to the loss of self-confidence and enthusiasm, and it interfered with her everyday functioning. Her focus on the disease and disease burden led to fears concerning the course of the disease but also psychological stress concerning breast esthetic because postoperative scars disturbed the normal breast shape. The patient had the full support of her family, at all times, and she consulted her GP often about overcoming current problems. What are the next steps? Are new surgical procedures needed and if not, how should she be followed up further along the line? Is the implant insertion eligible for the sake of esthetic correction?

Discussion

Ultrasonography is a painless and non-invasive method. In the previous decades, ultrasonography became important in diagnosing and follow-up of many diseases. It is also used in leading biopsy and/or other therapeutic interventional procedures. Examination sensibility is 68–98%, and specificity in differentiating lesions, solid vs. cystic is over 98%^{14,15}. Breast ultrasonography is performed in the supine position with the arm flexed behind the head, and if need be in the oblique position. Transducers with higher frequencies are used, 7.5 to 13 MHz. The breast is examined by the scanner, entirely: parallel scans from above downward, radial scans clockwise, from the center, which is areola, and scans in the same plane, with examination of the outer upper quadrant and inner upper quadrant first, and then both lower quadrants. The examination is finished by scanning the axillae, and then the supra and infra clavicular bed and retrosternal space.

Fibroadenomas are common benign breast tumors in young women with low risk for malignant alteration (0,03–0,1%) and it is a bit higher in multiple fibroadenomas, as well as in “giant fibroadenomas“, the size of over 4 cm^{5,6,7}. Clinical follow-up is important, regular US exams, and if need be, supplemental diagnostics, mammography, NMR, and surgical treatment.

Ultrasonography may follow the size, shape, contours of fibroadenoma, echo structure, echo texture, posterior phenomena, mobility and compressibility, as well as vasculature. Lesions that enlarge by 20% in a six-month follow-up period, no matter the age, are an indication for surgical removal, vacuum-assisted biopsy, radiofrequency ablation, or laser ablation¹⁶. Consecutive surgical interventions may, in time, lead to psychological suffering, especially in young people⁵.

Pasta et al. presented a case of a 22-year-old girl who was treated surgically several times. The authors suggested periodical radiologic exams and surgical treatment only for the cases of fast-growing masses¹⁷. Multiple fibroadenomas,

Multipli fibroadenomi, koji su hirurški odstranjivani, mogu indikovati i opsežan hirurški zahvat - rekonstruktivnu tehniku onkoplastike.

Povoski i sar. su u svom radu prikazali ženu sa 16 promena u dojkama, po osam u svakoj, koja je podvrgnuta vakuum asistiranom biopsiji 14 od 16 promena sa 11 pojedinačnih procedura tokom 15 dana. Step en recidiva bolesti bio je veoma nizak tokom ultrazvučnog praćenja od najmanje osam meseci¹⁸.

Upotreba novih nesteroidnih selektivnih antiestrogena i iskustva u vezi sa tim predstavljena su u studiji Dhair i sar. Praćeno je 60 pacijenata tokom šest meseci, mlađih od 35 godina koji su tri meseca uzimali lek. Rezultati kliničkog pregleda, vizuelne analogne skale za bol i ultrasonografije su pokazali da je 40% promena kompletno nestalo, 20% je imalo parcijalnu regresiju, a 40% nije odgovorilo na terapiju¹⁹.

Upotreba metformina, antihiperглиkemijskog leka, koji ima antiproliferativna i antiestrogena svojstva pokazala su se kao povoljna u lečenju multiplih fibroadenoma. U studiji Alipour i sar. praćeno je 175 žena starosti 18–50 godina kod kojih je bila potvrđena dijagnoza fibroadenoma i koje su uzimale metformin tri meseca. Rezultatom studije pokazan je povoljan ishod u smislu smanjenja tumorske promene²⁰.

Zaključak

Ultrasonografija je veoma značajna i važna metoda u praćenju promena na dojkama. Međutim, nije neuobičajena nesrazmera između opipljivih promena u dojkama i negativnog US nalaza, i obratno da se tumor u dojci može otkriti ultrazvukom, a da nije dokazan na fizikalnom pregledu. Tada se kao dopunske metode koriste mamografija i magnetna rezonanca.

Tretman multiplih fibroadenoma može biti komplikovan kliničkim nalazom rekurentnih promena i za sada nema konsenzusa o lečenju istih. Osoben pristup svakom pacijentu upućuje i na pojedinačnu odluku o daljem lečenju. Prema stručnom mišljenju radiologa za bolesti dojke, ultrasonografski pregledi na šest meseci i pregledi MR ukazuju potrebu za hirurškom intervencijom, posebno ako su uočene nove promene ili brzorastuće postojeće promene²¹.

surgically removed, may lead to an extensive surgical procedure – the reconstructive technique of oncoplasticity.

Povoski et al. presented a case of a woman with 16 breast lesions, 8 in each breast, who was treated with a vacuum-assisted biopsy of 14 out of 16 lesions with 11 singular procedures in 15 days. The degree of disease return was very low during ultrasonographic follow-up of at least 8 months¹⁸.

The use of novel non-steroidal selective anti-estrogens and related experience was presented in the study of Dhair et al. Sixty patients were followed during 6 months, younger than 35, who took the medication for three months. The results of clinical examination, visual analog pain scale, and ultrasonography showed 40% of lesions disappeared completely, 20% had partial regression, and 40% didn't respond to therapy¹⁹.

The use of metformin, an anti-hyperglycemic medication, with anti-proliferative and anti-estrogen characteristics proved to be useful in the treatment of multiple fibroadenomas. In the study of Alipour et al., 175 women were followed, aged 18–50 and they had the confirmed diagnosis of fibroadenoma and took metformin for three months. Study results showed a favorable effect on the reduction of tumor lesions²⁰.

Conclusion

Ultrasonography is a very significant and important method in the follow-up of breast lesions. However, it's not unusual to have a disproportion between palpable breast lesions and negative US findings, and vice-versa, a breast tumor may be detected by the US, and not be found on physical examination. In that case, supplemental methods are used, such as mammography and magnetic resonance.

The treatment of multiple fibroadenomas may be complicated by the clinical findings of repeated lesions and for the time being there is no consensus on the treatment of those. The personal approach to every single patient leads to singular decision-making on the treatment plan. According to a radiologist's expert opinion on breast lesions, ultrasonographic exams at six months time and NMR exams indicate the need for surgical intervention, especially if new lesions are found or existing ones grow fast²¹.

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Primljen - Received - 27.07.2023.

Ispravljen - Corrected - 07.10.2023.

Prihvaćen - Accepted - 30.10.2023.