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SEALED-OFF PERFORACIJA KOLOREKTALNOG KARCINOMA INICIJALNO INTERPRETIRANA KAO DIVERTIKULITIS: INTRAABDOMINALNI APSCES KAO DIJAGNOSTIČKA I TERAPIJSKA DILEMA

Uvod

Intraabdominalni apscesi predstavljaju česta urgentna stanja u kliničkoj praksi, najčešće kao komplikacija inflamatornih ili infektivnih procesa, uključujući apendicitis, divertikulitis, inflamatorne bolesti creva i postoperativne infekcije. Ipak, iako ređe, apsces može predstavljati i inicijalnu manifestaciju maligniteta, naročito kolorektalnog karcinoma (1). Takve atipične prezentacije mogu navesti na pogrešnu dijagnostičku orijentaciju i dovesti do odlaganja postavljanja prave dijagnoze.

Pravovremeno prepoznavanje činjenice da apsces ne mora uvek imati benignu etiologiju, već može biti posledica tumorske perforacije (1, 2), ključno je za izbor optimalnog terapijskog pristupa. Uloga radiološke dijagnostike, kao i dosledno sprovođenje postakutnog protokola, uključujući obaveznu kolonoskopiju, od presudnog su značaja kako bi se izbegli dijagnostički propusti.

U ovom radu prikazujemo slučaj pacijentkinje kod koje je kolorektalni karcinom prvi put manifestovan kao apscesna kolekcija u desnoj ilijačnoj regiji, inicijalno interpretirana kao komplikovani divertikulitis. Kroz prikaz toka dijagnoze i lečenja diskutujemo o dijagnostičkim dilemama, značaju anatomske varijacije i važnosti sistematske dijagnostike.

Prikaz slučaja

Pacijentkinja, starosti 61 godinu, bez prethodne istorije gastrointestinalnih bolesti, javila se na pregled zbog akutne pojave bolova u donjem desnom kvadrantu abdomena, mučnine, prolivastih stolica i povišene telesne temperature koje su trajale tri dana.

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U ličnoj anamnezi navodila je depresivni poremećaj (na redovnoj antidepresivnoj terapiji) i hroničnu leukopeniju, koja se pratila hematološki, ali bez jasne etiologije. Nije bilo značajnih podataka o prethodnim abdominalnim bolestima, operacijama, niti porodičnoj istoriji karcinoma.

Na prijemu su laboratorijske analize pokazale povišene inflamatorne markere, uključujući C-reaktivni protein (CRP), dok su vrednosti leukocita bile blago snižene, u skladu sa pratećom leukopenijom. Anemija nije bila prisutna.

Radiološkim pregledima (CT i NMR abdomena i male karlice) verifikovana je kolekcija u desnoj ilijačnoj regiji, veličine oko 5x5 cm, sa znakovima okolnog zapaljenskog infiltrata. Kao uzgredan nalaz verifikovana je dekstroponirana dolihosigma, što je bilo klinički značajno jer je anatomska varijacija dodatno otežala interpretaciju lokalizacije simptoma. S obzirom na lokalizaciju bola u desnoj ilijačnoj regiji i prateću kliničku sliku, inicijalno se sumnjalo na akutni apendicitis.

Međutim, radiološki nalazi i dalji tok bolesti ukazali su na komplikovani divertikulitis sa apscesom. Postavljena je radna dijagnoza komplikovanog divertikulitisa sa apscesnom formacijom (Hinchey stadijum II).

Pacijentkinja je zadržana na bolničkom lečenju na hirurškom odeljenju, gde je inicijalno lečena konzervativno. Terapijski pristup uključivao je obustavu peroralnog unosa, parenteralnu rehidraciju, korekciju elektrolita i uvođenje trojne antibiotske terapije (cefalosporin treće generacije, metronidazol i gentamicin). Tokom sedmodnevnog bolničkog praćenja došlo je do progresivnog kliničkog poboljšanja, normalizacije temperature, regresije abdominalnog bola i sniženja vrednosti zapaljenskih parametara. Kontrolni CT abdomena sedmog dana hospitalizacije pokazao je značajnu regresiju apscesa i smanjenje inflamacije u okolnim tkivima.

Pacijentkinja je otpuštena sa planiranom kontrolnom kolonoskopijom za šest nedelja, u skladu sa standardnim protokolom.

Kolonoskopski, u sigmoidnom kolonu, na oko 40 cm od anokutane linije, viđena je nepravilna tumorska formacija koja je sužavala lumen debelog creva za više od dve trećine. Takođe je u celom levom kolonu uočen nalaz masivne divertikuloze. Tom prilikom su uzeti uzorci za biopsiju. Histopatološka analiza potvrdila je prisustvo adenokarcinoma kolona.

Nakon kompletne onkološke evaluacije i preoperativne pripreme, pacijentkinja je podvrgnuta elektivnoj hirurškoj resekciji u osmoj nedelji od pojave simptoma. Intraoperativni nalaz je pokazao tumorsku masu na sigmoidnom kolonu, bez znakova peritonealne diseminacije ili rezidualnog apscesa. Urađena je onkološki adekvatna resekcija sa primarnom kolorektalnom anastomozom, bez potrebe za formiranjem stome. Tokom postoperativnog perioda nije bilo komplikacija; pacijentkinja je mobilisana i otpuštena bez tegoba.

Definitivna histopatološka analiza klasifikovala je tumor kao adenokarcinom sigmoidnog kolona, stadijuma T4, sa prisutnim divertikulomom u području tumor-

ske mase. Regionalni limfni čvorovi su bili pozitivni na metastatski infiltrat. TNM stadijum tumora: T4a, N2, M0.

Pacijentkinja je prikazana onkološkom konzilijumu i uključena u adjuvantni terapijski protokol, koji je obuhvatao hemoterapiju u skladu sa važećim vodičima za tretman karcinoma kolona. Na kontrolnim pregledima u narednim mesecima nije bilo znakova recidiva, a pacijentkinja je ostala bez funkcionalnih smetnji.

Diskusija

Intraabdominalni apscesi najčešće nastaju kao posledica različitih inflamatornih i infektivnih procesa, kao i postoperativnih komplikacija. Divertikulitis predstavlja najčešći etiološki faktor u njihovom razvoju, ali se tokom dijagnostičke evaluacije mora imati u vidu i mogućnost perforacije kolorektalnog karcinoma.

Kolorektalni karcinom spada među najčešće maligne bolesti gastrointestinalnog trakta, a njegova klinička prezentacija može biti veoma varijabilna. Perforacija kolorektalnog karcinoma predstavlja jednu od najtežih komplikacija ove bolesti, sa učestalošću koja se kreće između 1,6% i 10%. Ova komplikacija se češće javlja u uznapredovalim stadijumima bolesti i povezana je sa lošijom prognozom u odnosu na neperforirane tumore, jer često dovodi do peritonitisa, sepsa i potrebe za opsežnijim hirurškim zahvatima, uključujući hitne resekcije i izvođenje stome. Pored povećanog perioperativnog mortaliteta, perforirani tumori često imaju i lošiji onkološki ishod zbog potencijalne diseminacije tumorskih ćelija kroz peritonealnu šupljinu u trenutku perforacije (3, 4, 5, 6).

Perforacija tumora, iako ređa od perforacije divertikula, poznata je komplikacija kolorektalnog adenokarcinoma, naročito kod stenoza koje povećavaju intraluminalni pritisak. Sealed-off (zatvorena) perforacija predstavlja poseban oblik perforacije kod kolorektalnog karcinoma, pri kojoj dolazi do lokalnog, ograničenog oštećenja zida creva sa ekstraluminalnim širenjem sadržaja, ali bez slobodne komunikacije sa peritonealnom šupljinom. Ovaj mehanizam često rezultira formiranjem lokalnog apscesa ili flegmone, a klinička prezentacija može imitirati divertikulitis, apendicitis ili nespecifičnu abdominalnu infekciju (6, 7).

Za razliku od klasične slobodne perforacije, koja dovodi do difuznog peritonitisa i zahteva urgentnu hiruršku intervenciju, sealed-off perforacija može ostati klinički suptilna, često se inicijalno tretira konzervativno, a dijagnoza osnovnog maligniteta se odlaže do postakutne evaluacije. Međutim, i ovaj oblik perforacije nosi značajan rizik za diseminaciju tumorskih ćelija i peritonealne implantate, te ima potencijalno lošiju prognozu u odnosu na neperforirane tumore (6, 7).

U ovom slučaju, prisustvo apscesa u desnoj ilijačnoj regiji, odsustvo vidljive komunikacije sa luminalnim traktom i naknadno otkrivena stenoza sigmoidnog kolona upućuju na moguću sealed-off perforaciju koja se spontano zatvorila, verovatno za-

hvaljujući imunološkom odgovoru i ranom antibiotskom tretmanu. Literatura opisuje ovakve situacije kao dijagnostičke zamke, jer peritumorske perforacije mogu klinički imitirati divertikulitis. Klinička prezentacija divertikulitisa, uključujući lokalizovan bol, povišene inflamatorne parametre i nalaz apscesne kolekcije na radiološkom pregledu, često se preklapa sa slikom sealed-off perforacije kolorektalnog karcinoma. Obe patologije mogu pokazivati sličan nalaz na CT-u, kao što su perikolična inflamacija, ekstraluminalna kolekcija i zadebljanje zida creva. Međutim, kod sealed-off perforacije tumora, inflamatorni proces je najčešće posledica maligne stenoze ili fokalne ishemije izazvane tumorom, dok kod divertikulitisa nastaje kao posledica perforacije divertikuluma (8).

Prikazani slučaj ilustruje složenost dijagnostičkog procesa kod pacijenata sa atipičnom anatomijom, kao što je dekstroponirana dolihosigma. Klinička slika sa bolom u desnom donjem kvadrantu abdomena i povišenim inflamatornim parametrima tipično upućuje na apendicitis. U ovom slučaju, upravo zbog lokalizacije bola i laboratorijskih nalaza, postavljena je inicijalna sumnja na akutni apendicitis, što je dodatno usmerilo kliničko razmišljanje ka hitnoj hirurškoj intervenciji. Međutim, anatomske varijacije značajno mogu promeniti tok dijagnostike, a u takvim situacijama radiološki nalazi dobijaju ključnu ulogu. Precizna radiološka procena može sprečiti neindikovane urgentne operacije, koje često podrazumevaju invazivne procedure poput formiranja stome, čime se dodatno opterećuje pacijent (8).

U retrospektivi, hipotetička rana identifikacija maligniteta kao uzroka apscesa mogla je ubrzati dijagnostički i terapijski proces. Rana onkološka evaluacija bi omogućila blagovremeno stažiranje bolesti i planiranje elektivne resekcije sa potencijalnim očuvanjem funkcionalnosti (3). Međutim, operacija u uslovima aktivne inflamacije nosi značajan rizik od komplikacija, kao što su opsežna resekcija, izvođenje stome i produžena hospitalizacija (3, 4, 6). S druge strane, konzervativni pristup sa odloženom intervencijom, kakav je primenjen u ovom slučaju, omogućava stabilizaciju pacijenta i smanjenje perioperativnog rizika (9).

Otvoreno ostaje pitanje odnosa između divertikulitisa i kolorektalnog karcinoma, da li se radi o dva nezavisna entiteta ili o međusobno povezanim stanjima. U prikazanom slučaju, iako je inicijalna dijagnoza bila divertikulitis sa apscesom, naknadno otkrivanje stenozirajućeg adenokarcinoma sigmoidnog kolona postavlja dilemu da li je zapravo maligna lezija bila primarni uzrok zapaljenskog procesa. Jedna od mogućih patofizioloških veza jeste da tumor izazove delimičnu ili potpunu opstrukciju lumena, što pogoduje stazi fekalnog sadržaja i lokalnoj bakterijskoj proliferaciji, a samim tim i razvoju sekundarnog divertikulitisa. Alternativno, karcinom može dovesti do fokalne ishemije i oštećenja zida creva, što dodatno olakšava nastanak inflamacije (2).

Dakle, u određenim slučajevima, zapaljenski proces ne mora biti odvojen entitet, već manifestacija ili posledica osnovne maligne bolesti. Ova dijagnostička preklapanja naglašavaju važnost sprovođenja kompletne evaluacije i nakon smirivanja akutnih

simptoma, jer isključivanje maligniteta ima direktan uticaj na pravovremeno lečenje i prognozu (10, 11, 12, 13).

U ovom slučaju, dosledna primena postakutnog protokola za divertikulitis, uključujući i obaveznu odloženu kolonoskopiju, omogućila je pravovremeno otkrivanje tumora, ali i masivne divertikuloze levog kolona. Ta činjenica dodatno potvrđuje da je pacijentkinja imala predispoziciju za zapaljenske komplikacije, te da nije bilo moguće sa sigurnošću razlikovati da li su simptomi bili posledica divertikularne bolesti ili tumorske patologije. Da taj korak nije sproveden malignitet bi verovatno ostao neotkriven, što bi dovelo do kašnjenja u lečenju. Literatura beleži slučajeve višemesernih, pa čak i višegodišnjih odlaganja dijagnoze zbog prerane obustave evaluacije (14, 15, 16, 17).

Zaključno, ovaj slučaj jasno ilustruje koliko nespecifična prezentacija sa apscesom može maskirati ozbiljan patološki entitet kao što je kolorektalni karcinom. Kombinacija atipične anatomije, nespecifične kliničke slike i odsustva tipičnih simptoma može dovesti do pogrešnog lečenja, dok dosledno sprovođenje protokola značajno doprinosi blagovremenoj dijagnozi i optimalnom ishodu.

Zaključak

Prikazani slučaj podseća na važnost diferencijalne dijagnoze kod pacijenata sa abdominalnim apscesima, naročito kada klinička prezentacija nije tipična. Iako su najčešći uzroci inflamatorni i infektivni, mogućnost postojanja maligniteta ne sme biti zanemarena, posebno kod starijih pacijenata i atipičnih nalaza. Detaljna radiološka evaluacija i dosledno sprovođenje postakutnih dijagnostičkih protokola, uključujući kolonoskopiju, od presudne su važnosti za pravovremeno otkrivanje osnovnog uzroka i planiranje adekvatnog lečenja.

Konzervativni pristup u fazi akutne inflamacije omogućava bezbednije uslove za elektivnu operaciju i bolji funkcionalni ishod. Ovaj slučaj potvrđuje značaj multidisciplinarnog pristupa, kliničke sumnje i protokolarne dijagnostike kao faktora koji direktno utiču na kvalitet lečenja i ishod bolesti.

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SEALED-OFF PERFORATION OF COLORECTAL CARCINOMA INITIALLY INTERPRETED AS DIVERTICULITIS: INTRA-ABDOMINAL ABSCESS AS A DIAGNOSTIC AND THERAPEUTIC DILEMMA

Introduction

Intraabdominal abscesses represent common emergency conditions in clinical practice, most frequently arising as complications of inflammatory or infectious processes, including appendicitis, diverticulitis, inflammatory bowel disease, and postoperative complications. However, although less common, an abscess can also be the initial manifestation of malignancy, particularly colorectal cancer (1). Such atypical presentations may lead to incorrect diagnostic assumptions and delay the establishment of the correct diagnosis.

It is important to promptly consider that an abscess may occasionally originate from tumor perforation rather than a benign process. That is crucial for choosing the optimal therapeutic approach (1, 2). The role of radiologic imaging, as well as consistent implementation of the post-acute protocol, including mandatory colonoscopy is of vital importance to avoid diagnostic oversights.

In this paper, we present the case of a female patient in whom colorectal cancer first manifested as an abscess formation in the right iliac region, initially interpreted as complicated diverticulitis. Through the course of diagnosis and treatment, we discuss diagnostic dilemmas, the significance of anatomical variations, and the importance of systematic evaluation.

Case Report

A 61-year-old female patient with no prior history of gastrointestinal diseases presented with acute onset of pain in the lower right abdominal quadrant, nausea,

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diarrhoea and fever lasting for three days. Her medical history included depressive disorder (on regular antidepressant therapy) and chronic leukopenia, monitored by hematologist but without a clear etiology. There were no significant previous abdominal illnesses, surgeries, or family history of cancer.

Upon admission, laboratory analysis revealed elevated inflammatory markers, including C-reactive protein (CRP), while leukocyte counts were mildly decreased, consistent with the underlying leukopenia. Anemia was not present.

Radiologic evaluation (CT and MRI of the abdomen and pelvis) revealed a collection in the right iliac region, approximately 5×5 cm in size, with signs of surrounding inflammatory infiltration. As an incidental finding, dextropositioned dolichosigmoid colon was noted, which was clinically relevant as this anatomical variation complicated the interpretation of symptom localization. Given the location of pain and the clinical presentation, acute appendicitis was initially suspected. However, radiological findings and disease progression pointed toward complicated diverticulitis with abscess formation. A working diagnosis of complicated diverticulitis with abscess formation (Hinchey stage II) was established. The patient was admitted to the surgical department for inpatient care, initially managed conservatively. The therapeutic approach included bowel rest, parenteral rehydration, correction of electrolytes, and initiation of triple antibiotic therapy (third-generation cephalosporin, metronidazole, and gentamicin). Over seven days of hospital monitoring, there was progressive clinical improvement, normalization of temperature, regression of abdominal pain, and decreased inflammatory markers. A follow-up CT scan on the seventh day showed significant regression of the abscess and reduced inflammation in the surrounding tissues.

The patient was discharged with a scheduled follow-up colonoscopy in six weeks, in accordance with standard protocol.

Colonoscopy revealed an irregular tumor formation in the sigmoid colon, approximately 40 cm from the anocutaneous line, narrowing the lumen by more than two-thirds. Additionally, massive diverticulosis was observed throughout the left colon. Biopsy samples were taken.

Histopathological analysis confirmed the presence of colonic adenocarcinoma.

After complete oncologic evaluation and preoperative preparation, the patient underwent elective surgical resection in the eighth week following symptom onset. Intraoperative findings revealed a tumor mass in the sigmoid colon, without signs of peritoneal dissemination or residual abscess. An oncologically adequate resection was performed with primary colorectal anastomosis, without the need for stoma formation. The postoperative course was uneventful. The patient was mobilized and discharged without complaints.

Definitive histopathological analysis classified the tumor as adenocarcinoma of the sigmoid colon, stage T4, with diverticula present in the tumor area. Regional

lymph nodes tested positive for metastatic infiltration. Tumor TNM staging: T4a, N2, M0. The patient was referred to an oncologic board and included in an adjuvant chemotherapy protocol in accordance with current colorectal cancer treatment guidelines. On follow-up examinations over the following months, there were no signs of recurrence, and the patient remained asymptomatic.

Discussion

Intraabdominal abscesses most commonly arise from various inflammatory and infectious conditions or postoperative complications. Diverticulitis is the most frequent etiological factor, but during diagnostic evaluation, the possibility of colorectal cancer perforation must also be considered.

Colorectal cancer is among the most common malignancies of the gastrointestinal tract, with highly variable clinical presentations. Perforation of colorectal cancer is one of the most severe complications, with an incidence ranging from 1.6% to 10%. It typically occurs in advanced stages and is associated with poorer prognosis compared to non-perforated tumors, as it often leads to peritonitis, sepsis, and the need for extensive surgical procedures, including emergency resection and stoma creation. In addition to increased perioperative mortality, perforated tumors often carry worse oncologic outcomes due to the potential dissemination of tumor cells into the peritoneal cavity at the time of perforation (3, 4, 5, 6).

Tumor perforation, although less frequent than diverticular perforation, is a known complication of colorectal adenocarcinoma, particularly in the presence of stenosis that increases intraluminal pressure. A sealed-off perforation represents a specific type of tumor perforation, characterized by localized disruption of the bowel wall with extraluminal spread of contents, without free communication with the peritoneal cavity. This mechanism often results in localized abscess or phlegmon formation, and the clinical presentation may mimic diverticulitis, appendicitis, or nonspecific abdominal infection (6, 7).

Unlike free perforation, which leads to diffuse peritonitis and requires urgent surgery, a sealed-off perforation may remain clinically subtle, often initially treated conservatively, and the underlying malignancy diagnosed only during post-acute evaluation. Nonetheless, even this form of perforation carries a significant risk of tumor cell dissemination and peritoneal implants, thus potentially predicting a worse prognosis than non-perforated tumors (6, 7).

In this case, the presence of an abscess in the right iliac region, absence of visible luminal communication, and subsequent discovery of a stenosing sigmoid tumor suggest a sealed-off perforation that spontaneously closed, likely due to immune response and early antibiotic therapy. Literature describes such scenarios as diagnostic traps, as peritumoral perforations may clinically resemble

diverticulitis. The clinical presentation of diverticulitis, including localized pain, elevated inflammatory markers, and abscess formation on imaging often overlaps with sealed-off colorectal cancer perforation. Both conditions may demonstrate similar CT findings, such as pericolic inflammation, extraluminal collections, and bowel wall thickening. However, in tumor-related perforations, inflammation is typically caused by malignant stenosis or tumor-induced focal ischemia, whereas in diverticulitis, it arises from diverticular rupture (8).

The presented case illustrates the diagnostic complexity in patients with atypical anatomy, such as dextropositioned dolichosigmoid colon. A clinical manifestation of lower right quadrant pain and elevated inflammatory markers typically suggests appendicitis. In this case, the localization of pain and laboratory findings initially led to a suspicion of acute appendicitis, further guiding clinical reasoning toward urgent surgery. However, anatomical variations can significantly alter diagnostic pathways, highlighting the critical role of radiologic imaging. Accurate radiological assessment may prevent unnecessary emergency surgeries, which often involve invasive procedures such as stoma creation, thereby increasing patient morbidity (8).

In retrospect, earlier identification of malignancy as the cause of the abscess might have accelerated diagnosis and treatment. Early oncologic evaluation could have enabled timely staging and planning of elective resection with preservation of function (3). However, surgery during active inflammation carries significant risks, such as extensive resections, stoma formation, and prolonged hospitalization (3, 4, 6). On the other hand, the conservative approach with delayed intervention, as applied in this case, allows for patient stabilization and reduced perioperative risk (9).

The relationship between diverticulitis and colorectal cancer remains open to debate, whether they represent distinct entities or interrelated conditions. In this case, although the initial diagnosis was diverticulitis with abscess, the later discovery of a stenosing sigmoid adenocarcinoma raises the question of whether the malignancy was the primary cause of the inflammatory process. One possible pathophysiological link is that the tumor causes partial or complete luminal obstruction, promoting fecal stasis and local bacterial overgrowth, thereby facilitating secondary diverticulitis. Alternatively, the tumor may lead to focal ischemia and bowel wall damage, further contributing to inflammation (2).

Therefore, in certain cases, the inflammatory process may not be a separate entity but rather a manifestation or consequence of underlying malignancy. These diagnostic overlaps emphasize the importance of complete evaluation after resolution of acute symptoms, as ruling out malignancy directly impacts timely treatment and prognosis (10, 11, 12, 13).

In this case, consistent application of the post-acute diverticulitis protocol, including mandatory delayed colonoscopy enabled timely detection of the tumor as well as extensive left-sided diverticulosis. This further confirms that the patient had a predisposition to inflammatory complications, and it was not possible to definitively

determine whether symptoms were due to diverticular disease or tumor pathology. If this step had been omitted, the malignancy might have remained undetected, delaying treatment. Literature reports cases of several-month or even multi-year diagnostic delays due to premature cessation of evaluation (14, 15, 16, 17).

In conclusion, this case clearly illustrates how a nonspecific abscess presentation can mask a serious pathological entity such as colorectal cancer. A combination of atypical anatomy, vague clinical signs, and absence of classic symptoms can lead to misdiagnosis and inappropriate treatment, while strict application of diagnostic protocols significantly contributes to timely diagnosis and optimal outcomes.

Conclusion

This case highlights the importance of differential diagnosis in patients with abdominal abscesses, particularly when the clinical presentation is atypical. Although the most common causes are inflammatory and infectious, the possibility of malignancy must not be overlooked, especially in older patients and in the presence of atypical findings. Detailed radiological assessment and consistent implementation of post-acute diagnostic protocols, including colonoscopy, are crucial for timely identification of the underlying cause and planning appropriate treatment.

A conservative approach during the acute inflammatory phase provides safer conditions for elective surgery and better functional outcomes. This case confirms the value of a multidisciplinary approach, clinical vigilance, and protocol-based diagnostics as factors that directly influence treatment quality and disease outcomes.

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