

P06 BRONHOSKOPSKA LAVAŽA U TRETMANU APSCESA PLUĆA

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UVOD

Apsces pluća može biti izazvan mnogobrojnim patogenim i uslovno patogenim bakterijama. Najčešći uzročnici su: Staphylococcus aureus, Diplococcus pneumoniae, Streptococcus pneumoniae, Escherichia coli, Pseudomonas aeruginosa, dok se anaerobi retko izoluju. Infekcija nastaje inhalacijom uzročnika i širenjem iz okolnih ili udaljenih gnojnih ognjišta preko krvi ili limfe. Dijagnoza se postavlja na osnovu anamneze, kliničkog pregleda, rendgenografijom pluća, kao i bronhoskopskim pregledom. Laboratorijske analize pokazuju leukocitozu sa granulocitozom, ubranu sedimentaciju, porast nespecificnih inflamatornih markera, često i sekundarnu anemiju. Od posebnog značaja je citološki nalaz u sputumu. Direktnom baciloskopijom i kulturom otkrivaju se uzročnici. Lecenje apscesa pluća u kliničkoj praksi je složeni postupak zbog postojanja više uzročnika i sprovodi se istovremenim davanjem dva antibiotika u maksimalnim dozama prema antibiogramu sputuma. Uspešnom lečenju od koristi mogu biti posturalna drenaža, primena bronhodilatatora, sekretolitika i ekspektoransa, a endoskopsku lavazu svavako treba prineniti osim u tezim slucajeva gde postoje apsolutne kontraindikacije za bronhoskopiju. Taktika lečenja plucnog abscesa direktno zavisi od težine bolesti, ali se uvek sprovodi u bolničkim uslovima. Najveći broj obolelih uspešno se izleči u toku 6 do 8 nedelja. Neizlečeni apsces posle 8 nedelja označava se hroničnim i treba ga podvrgnuti hirurškom lečenju.

PRIKAZ SLUČAJA

Slučaj I. GI, muskarac star 40 godina, nepusac, bez komorbiditeta, negativna licna i porodicna anamneza. Hospitalizovan na Pulmoloskom odeljenju oktobra 2023 zbog abscesa levog gornjeg reznja (u projekciji lingule). Simptomi su se javili 3 nedelja prethodno: febrilnost do 39C glavno tipa kontinua u popodnevnim i vecernjim satima, sa povremenom drhtavicom, jezum, preznojavanjem nocu, lakim smanjenjem apetita, produktivnim kasljem sa obilnom ekspektoracijom gustog tamnozelenog sekreta sa putridnim mirisom koji je jako zaudarao (miris "trulezi"). Bila je primenjena antibiotska terapija (tbl cefixim 400 1x1) u trajanju od deset dana bez efekta. Na radiografiji grudnog kosa u projekciji lingule videla se velika kavernoza promena (precnika od 10 cm) sa nivoom i izrazenim perikavernoznim infiltratom u konekciji sa srcanom i senkom lateralnog toraksnog zida. Laboratorijske analize su pokazale povecanje nespecificnih inflamatornih markera (CRP preko 200, ref vrednost do 5), uvecanu SeErc 84 za prvi sat, leukocitozu od 13.5/mm3 sa dominacijom neutofila od 95% i lakse povecanje D-dimera (1090, ref <500). Nije dobivena bakterioloska potvrda iz bronhoaspirata (kulture su ostale negativne nakon inkubacije od 48

sati). Na CT toraksa se videla velika abscesna formacija i konsolidacija u linguli sa vazdusnim bronhogramom, te reaktivno uvecane medijastinalne limfoglandule. Bronhoskopija je pokazala urednu prolaznost do subsegmenata, hiperemija sluzokoze levog bronhijalnog stabla sa obilnim belicastim sekretom koji nailazi iz bazalnih segmentalnih usca. Nakon aspiracije izvršena je lavaza sa 500 ml fizioloskog rastvora 0.9% NaCl. Postupak je ponovljen 14 puta tokom hospitalizacije od 20 dana, kontrolna grafija pri otpustu je pokazala rezoluciju sa smanjenjem debljine zidova i perikavernoznih infiltrata. Rtg grafija (PA i lateralna projekcija) pre pocetka terapije U toku hospitalizacije kod pacijenta su uradjene 14 bronhoskopje sa lavazom od 500 do 750 ml fizioloskog rastvora 0.9% NaCl i aspiracijom sadrzaja (bronhoskopska lavaza je bila radjena jedan put na 24 casova. Radiografije su pokazivale redukciju abscesne supljine, tako da za period od 14 dana je primecena redukcija za vise od polovine (od 4 na oko 1.5 cm). Subjektivno stanje se znacajno popravilo, pacijent je bio afebrilan za cello vreme hospitalizacije, apetit se normalizovao, dobio je na telesnu tezinu. Nakon otpusta proizveden je medikamentozni tretman sledeca tri meseca sa clindmicoom u dozi od 600 mg/24 casa. Radioloska slika je pokazala potpunu normalizaciju nakon tri meseci. Rtg grafija (PA i lateralna projekcija) nakon tri meseca od pocetka terapije

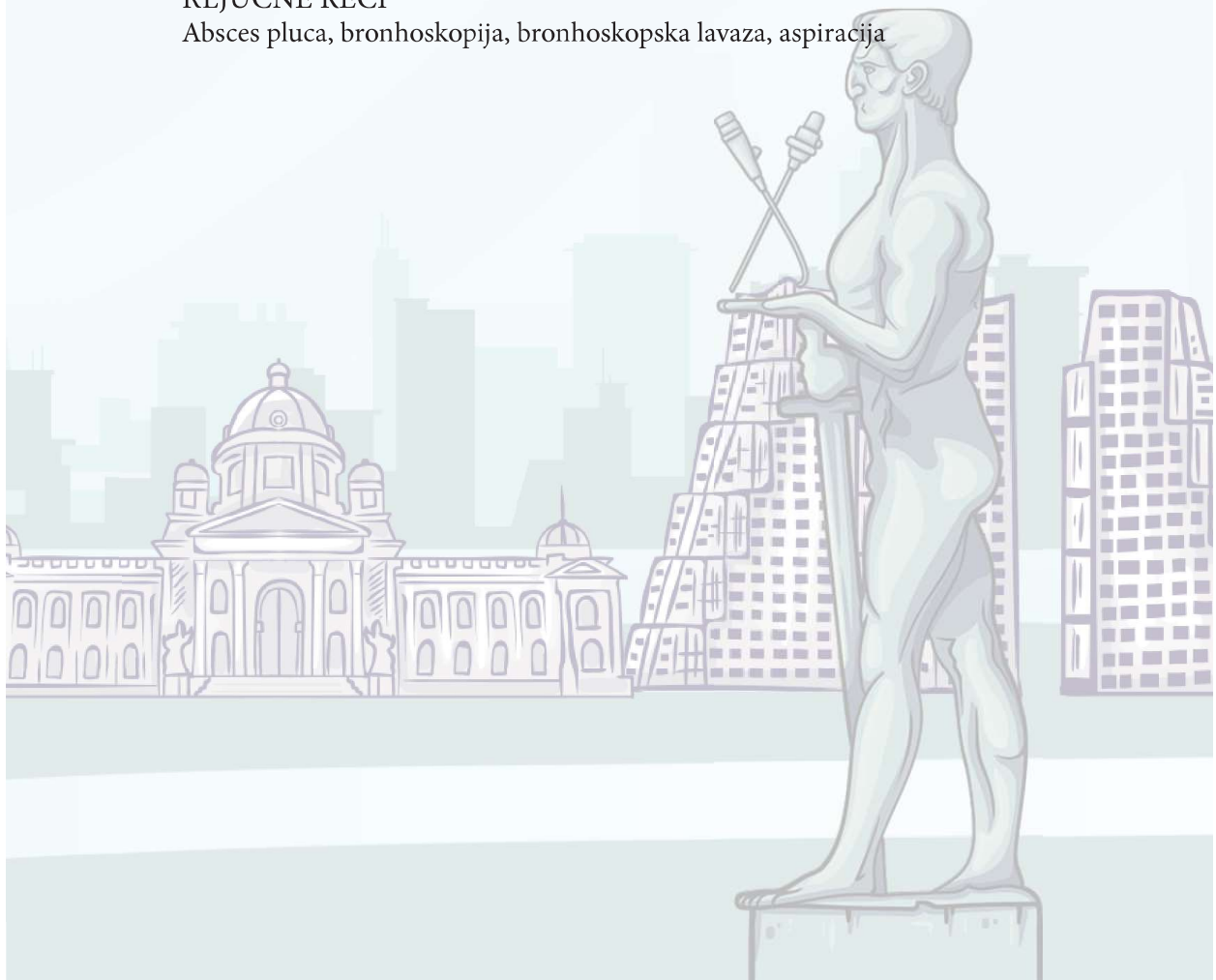
Slucaj 2. SP, muskarac star 70 godina, bez komorbiditeta, pusi po 5 cigareta na dan, ne konzumira alkohol. Hospitalizovan zbog kaslja sa ekspektoracijom gustog sekreta sa zelenim gnojivim i krvavim primesama, visoke febrilnosti sa pojavom groznice. Simptomi su se javili dve nedelje pre prijema. Sproveden tretman antibiotikom nije imao osobitog efekta zbog cega je indikovana hospitalizacija. Na radiografiji grudnog kosa desno u visini hilusa videla se okrugla formacija sa nivoom i suspektim prikazom drenaznog bronha. CT toraksa je pokazao kavitacionu leziju aproksimativne velicine 8.5x7.6 cm sa aerolikvidnim nivoom i celijskim detritusom. Pratilo su se i reaktivno uvecane hilarne i paratrahealne limfoglandule. Laboratorijske analize su pokazale povecanje nespecificnih inflamatornih markera (CRP 184, ref vrednost do 5), uvecanu SeErc 106 za prvi sat, leukocitozu od 21.5/mm³ sa dominacijom neutofila od 90% i povecanje D-dimera (3080, ref <500). U toku hospitalizacije primenjen je dvojni antibiotski tretman (sirokospektarni i antianaerobik) sa ekscesivnom suportivnom terapijom. Postiglo se klinicko poboljsanje, a radioloski se pratila usporena rezolucija. Bronhoskopija je pokazala urednu prolaznost do subsegmenata. Bronhoskopska lavaza je bila radjena 8 puta (iz aspirata nisu izolovani patogeni uzrocnici, bakterioloski pregled nije pokazao porast kultura nakon inkubacije). Zbog perzistiranja radioloskih promena u dva navrata je bila uradjena bronhobiopsija i transbronhijalna biopsija (histopatoloskom analizom uzetih primeraka nije bio detektovan malignitet, specifican process ili drugi nalaz koji bi se uklapao u odredjeni klinicki entitet). Sveukupni nalaz je odgovarao plucnom abscesu, a ponavljane lavaze su pomogle ubrzavanju restitucije. Pratilo se klinicko i laboratorijsko poboljsanje, a rentgenski su se pratile promene u pravcu adhezija. Nakon otpusta pacijent je bio tretiran 3 meseci oralnim klindamicinom i privremenim oralnim steroidnim rezimom u opadajucim dozama. Pacijent je pracen tokom godinu dana od zavrsetka terapije. Nije zapazena pojava febrilnosti ili bilo kakve sumnje na recidiv.

ZAKLJUČAK

Prikazani su slucaji sa plucnim abscesom nastalim usled komplikacije pneumonije kod kojih nije dobivena bakteriološka potvrda. Tretman je bio empirijski dvojnim antibiotikom. Bronhoskopska lavaza i aspiracija sekreta bila je radjena svakodnevno u razumnom okviru podnosljivosti. Radiografsku regresiju smo dobili u ocekivanom vremenskom periodu, cime smo potvrdili uticaj i znacaj ponavljanih bronhoskopskih lavaza. Agresivnom aplikacijom fizioloskog rastvora kroz usce bronha anatomski zahvacenog segmenta i lobusa, vrseno je direktno ispiranje sluzavognojnog sadrzaja i detritusa, cime je bila olaksana tkivna regeneracija zahvacenog dela pluca i postigla se restitucija ad integrum u optimalnom vremenu sa redukovanjem stvaranja rezidua. Kod prikazanih smo dobili skoro potpunu radiolosku rezoluciju. Pacijenti su dobro podneli intervenciju i celokupni tretman. Ponavljane endoskopske lavaze fizioloskim rastvorom su imale pozitivan uticaj i u znacajnom obimu su pomogle konzervativnom lecenju.

KLJUČNE REČI

Absces pluca, bronhoskopija, bronhoskopska lavaza, aspiracija



P06 BRONCHOSCOPIC WASHING IN THE TREATMENT OF LUNG ABSCESS

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INTRODUCTION

Lung abscess can be caused by numerous pathogenic and conditionally pathogenic bacteria. The most common causative agents are: Staphylococcus aureus, Diplococcus pneumoniae, Streptococcus pneumoniae, Escherichia coli, Pseudomonas aeruginosa, while anaerobes are rarely isolated. The infection is caused by inhalation of the causative agent and its spread from surrounding or distant purulent foci via blood or lymph. The diagnosis is made on the basis of history, clinical examination, lung x-ray, as well as bronchoscopic examination. Laboratory analyzes show leukocytosis with granulocytosis, accelerated sedimentation, an increase in nonspecific inflammatory markers, and often secondary anemia. Of particular importance is the cytological finding in the sputum. Causative agents are detected by direct bacilloscopy and culture. Treatment of lung abscess in clinical practice is a complex procedure due to the existence of multiple causative agents and is carried out by simultaneous administration of two antibiotics in maximum doses according to the sputum antibiogram. Postural drainage, application of bronchodilators, secretolytics and expectorants can be useful for successful treatment, and endoscopic lavage should always be performed except in severe cases where there are absolute contraindications for bronchoscopy. The tactics of treating a lung abscess directly depends on the severity of the disease, but it is always carried out in hospital conditions. Most patients are successfully cured within 6 to 8 weeks. An untreated abscess after 8 weeks is considered chronic and should undergo surgical treatment.

CASE REPORT

Case 1. GI, 40-year-old man, non-smoker, no comorbidities, negative personal and family history. Hospitalized at the Pulmonology Department in October 2023 due to an abscess of the left upper lobe (in the projection of the lingula). The symptoms appeared 3 weeks previously: febrile up to 39C, mainly continuous type in the afternoon and evening, with occasional shivering, chills, night sweats, slight loss of appetite, productive cough with copious expectoration of thick dark green discharge with a putrid odor that was very foul smelling (smell "rotten"). Antibiotic therapy (tbl cefixim 400 1x1) was administered for ten days without effect. A large cavernous change (diameter of 10 cm) was seen on the chest X-ray in the projection of the lingula with a level and pronounced pericavernous infiltrate in connection with the heart and the shadow of the lateral thoracic wall. Laboratory analyzes showed an increase in non-specific inflammatory markers (CRP over 200, ref value up to 5), increased SeErc 84

for the first hour, leukocytosis of $13.5/\text{mm}^3$ with a predominance of neutrophils of 95% and a slight increase in D-dimer (1090, ref <500). Bacteriological confirmation was not obtained from the bronchoaspirate (cultures remained negative after 48 hours of incubation). CT of the chest showed a large abscess formation and consolidation in the lingula with an air bronchogram, and reactively enlarged mediastinal lymph glands. Bronchoscopy showed regular passage to the subsegments, hyperemia of the mucous membrane of the left bronchial tree with abundant whitish secretion coming from the basal segmental mouths. After aspiration, lavage was performed with 500 ml of physiological solution 0.9% NaCl. The procedure was repeated 14 times during the 20-day hospitalization, the control graphy at discharge showed resolution with a decrease in the thickness of the walls and pericavernous infiltrates. X-ray (PA and lateral projection) before the start of therapy During the patient's hospitalization, 14 bronchoscopies were performed with lavage of 500 to 750 ml of physiological solution 0.9% NaCl and aspiration of the contents (bronchoscopic lavage was performed once every 24 hours. Radiographs showed a reduction of the abscess cavity, so that in a period of 14 days a reduction by more than half (from 4 to about 1.5 cm) was observed. The patient's condition improved significantly, the patient was afebrile for the entire time of hospitalization, his appetite returned to normal. After discharge, the medical treatment was extended for the next three months with clindmic at a dose of 600 mg/24 hours. The radiological picture showed complete normalization after three months. X-ray (PA and lateral projection) after three months from the beginning of therapy

Case 2. SP, a 70-year-old man, without comorbidities, smokes 5 cigarettes a day, does not consume alcohol. Hospitalized due to cough with expectoration of thick secretions with green purulent and bloody admixtures, high febrility with onset of fever. Symptoms appeared two weeks before admission. The antibiotic treatment did not have a particular effect, which is why hospitalization is indicated. On the radiograph of the chest on the right at the level of the hilus, a round formation with a level and a suspicious view of the drainage bronchus was seen. Chest CT showed a cavitation lesion of approximate size 8.5×7.6 cm with air-liquid level and cellular detritus. Reactively enlarged hilar and paratracheal lymphoglands were also monitored. Laboratory analyzes showed an increase in non-specific inflammatory markers (CRP 184, ref value up to 5), an increased SeErc 106 for the first hour, a leukocytosis of $21.5/\text{mm}^3$ with a predominance of neutophils of 90% and an increase in D-dimer (3080, ref <500). During hospitalization, dual antibiotic treatment (broad-spectrum and anti-anaerobic) with excessive supportive therapy was applied. Clinical improvement was achieved, and slow resolution was observed radiologically. Bronchoscopy showed normal patency to the subsegments. Bronchoscopic lavage was performed 8 times (no pathogens were isolated from the aspirate, bacteriological examination did not show an increase in cultures after incubation). Due to the persistence of radiological changes, a bronchobiopsy and a transbronchial biopsy were performed on two occasions (the histopathological analysis of the samples did not detect malignancy, a specific process or other finding that would fit into a certain clinical entity). The overall finding was consistent with a lung abscess, and repeated lavages helped speed up restitution. Clinical and laboratory improvement was monitored, and changes in the direction of

adhesions were monitored X-ray. After discharge, the patient was treated for 3 months with oral clindamycin and a temporary oral steroid regimen in decreasing doses. The patient was monitored for one year after the end of the therapy. No occurrence of fever or any suspicion of recurrence was observed

CONCLUSION

Cases with a lung abscess caused by a complication of pneumonia, in which no bacteriological confirmation was obtained, are presented. Treatment was empiric with dual antibiotics. Bronchoscopic lavage and aspiration of secretions was performed daily within a reasonable range of tolerance. We obtained radiographic regression in the expected time period, thereby confirming the impact and importance of repeated bronchoscopic lavages. By aggressive application of saline solution through the opening of the bronchus of the anatomically affected segment and lobe, a direct washing of the mucous content and detritus was performed, which facilitated the tissue regeneration of the affected part of the lung and achieved ad integrum restitution in the optimal time with reduced residue formation. With the ones shown, we got almost complete radiological resolution. The patients tolerated the intervention and the entire treatment well. Repeated endoscopic lavages with physiological solution had a positive effect and significantly helped conservative treatment.

KEYWORDS

Lung abscess, bronchoscopy, bronchoscopic lavage, aspiration

