

SINDROM GORNJE ŠUPLJE VENE – VAŽAN ENTITET ZA RAZMATRANJE U DIFERENCIJALNOJ DIJAGNOZI EDEMA LICA I VRATA

SUPERIOR VENA CAVA SYNDROME – AN IMPORTANT ENTITY TO CONSIDER IN THE DIFFERENTIAL DIAGNOSIS OF FACIAL AND NECK SWELLING

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Sažetak

Edem lica i vrata je česta manifestacija u imunološkoj i dermatološkoj praksi. Uzroci edema lica mogu biti različiti, od benignih, sa spontanom regresijom, do životno ugrožavajućih. S obzirom da etiologija određuje protokol lečenja i prognozu, to je rano utvrđivanje uzroka neophodno za dalje lečenje. Kompresija gornje šuplje vene jedan je od ređih uzroka nastanka edema lica i vrata, ali predstavlja ozbiljno životno ugrožavajuće stanje, i neretko je prvi znak maligniteta. U ovom radu prikazujemo slučaj pacijenta sa višemesečnim edemom lica i vrata, sa urednim radiogramom pluća. Multislajsnom skenerskom koronarnom angiografijom pluća detektovano je prisustvo velike tumorske mase sa kompresijom gornje šuplje vene. Iako sindrom gornje šuplje vene spada u retke uzroke edema lica i vrata, prisustvo otoka koji se pogoršava pri ležanju, dispneja pri ležanju, prisustvo respiratorne simptomatologije, treba da pobudi sumnju na sindrom gornje šuplje vene.

Ključne reči: sindrom gornje šuplje vene; otok; lice; radiografija grudnog koša; CT; neoplazme; tromboza; znaci i simptomi

Abstract

Facial and neck swelling are common presentations in immunological and dermatological practices, with causes ranging from benign conditions that regress spontaneously to potentially life-threatening issues. Prompt identification of the underlying cause is crucial as it guides for further treatment and affects prognosis. Compression of the superior vena cava is a less frequent cause of facial and neck swelling but can indicate a serious, life-threatening condition, particularly malignancy. In this report, we present a case of persistent facial and neck swelling in a patient over several months, with a normal chest radiograph. Chest multi-slice computed tomography (MSCT) revealed of a large tumor mass compressing the superior vena cava. Although superior vena cava syndrome is rare as a cause of facial and neck edema, the presence of worsening swelling when lying down, dyspnea in the supine position, and respiratory symptoms should raise suspicion for this syndrome.

Key words: Superior Vena Cava Syndrome; Edema; Face; Radiography, Thoracic; Tomography, X-Ray Computed; Neoplasms; Thrombosis; Signs and Symptoms

Uvod

Otok lica i vrata je česta manifestacija u imunološkoj i dermatološkoj praksi. Uzroci edema lica mogu biti različiti, od benignih, sa spontanom regresijom, do životno ugrožavajućih. S obzirom da etiologija određuje protokol lečenja i prognozu, to je rano utvrđivanje uzroka neophodno za dalje lečenje.

Inicijano sagledavanje pacijenta sa edemom lica i vrata najčešće pobuđuje sumnju na alergijsku reakciju, ređe angioedem usled urođene deficijencije C1 inhibitora (hereditarni angioedem), angioedem usled korišćenja ACE inhibitora ili stečenog deficita C1 inhibitora usled paraproteinemije. Ređi, mogući uzročnici edema lica i vrata su korišćenje lekova, dermatomiozitis, neke genski uslovljene bolesti (Melkerson–Rozentalov sindrom), erizipel i druge infekcije, kao i infekcije sinusa i poda usne duplje [1].

Kako je u ranoj fazi bolesti otok lica, najčešće u toku noći i u jutarnjim satima, jedina manifestacija, pacijenti ga najčešće opisuju kao alergijsku reakciju i neretko ga povezuju sa spoljnim noksama. U većini slučajeva inicijalno se započinje lečenje po protokolu lečenja angioedema i urtikarije.

Sindrom gornje šuplje vene (SVCS) jedno je od ređih stanja, koje nastaje usled parcijalne ili kompletne venske opstrukcije, spoljnom kompresijom ili trombotičnom masom [2] što ima za posledicu stazu u venskim i limfnim sudovima.

U našem slučaju, prikazan je pacijent sa intermitentnim otokom lica u trajanju od dva meseca.

Prikaz slučaja

Pacijent je primljen na odeljenje dermatologije radi dijagnostike otoka i crvenila lica, koje ima dva meseca unazad.

Pacijent navodi da tegobe počinju bolom u grlu i otežanim gutanjem; da je zbog ovih tegoba koristio lokalno oblog od komove raki-je, nakon čega dolazi do pojave crvenila kože vrata i donjeg dela lica praćenog otokom, te je pacijent pojavu otoka i crvenila povezao sa alergijskom reakcijom na primenjene obloge. Pacijent takođe navodi da je u prethodnih mesec i po dana imao česte otoke u predelu lica, izraženije u jutarnjim satima, povremeno promuklost. Javio se ordinirajućem lekaru, zapo-

Introduction

Swelling of the face and neck is a common occurrence in both immunological and dermatological settings. The causes of facial edema can vary widely, ranging from benign conditions with spontaneous regression to life-threatening issues. Identifying the underlying cause early is crucial for determining the appropriate treatment and prognosis.

Initially, when a patient presents with facial and neck edema, the suspicion often leans towards an allergic reaction. Less commonly, this could be angioedema due to congenital C1 inhibitor deficiency (hereditary angioedema) or angioedema triggered by ACE inhibitors or acquired C1 inhibitor deficiency associated with paraproteinemia. Other less frequent causes include medication reactions, dermatomyositis, certain genetic disorders like Melkersson-Rosenthal syndrome, erysipelas, infections involving the sinuses or oral cavity floor, among others [1].

In the early stages of such condition, patients may mistake the facial swelling - especially noticeable in the mornings and nights - as an allergic reaction, often attributing it to external factors. Consequently, treatment is often initiated following protocol for managing angioedema and urticaria.

Superior vena cava syndrome is a relatively rare condition resulting from partial or complete obstruction of the superior vena cava, either by external compression or a thrombotic mass [2]. This obstruction leads to congestion of the venous and lymphatic vessels.

In our presented case, we describe a patient experiencing intermittent facial swelling persisting over two months.

Case Report

The patient was admitted to the dermatology department due to persistent facial swelling and redness lasting for two months.

According to the patient, the symptoms initially started two months ago with a sore throat and difficulty swallowing. To alleviate these symptoms, the patient applied a local compress soaked in grape brandy. Subsequently, redness appeared on the skin of the neck and lower part of the face, accompanied by swelling. The patient believed this swelling and redness to be an allergic reaction trig-

čeo lečenje antibiotskom terapijom, ali se otok i crvenilo pogoršava. U daljem toku lečenja pacijenta su više puta pregledali otorinolaringolog, hematolog, pulmolog i dermatolog. Urađen je radiogram pluća – nalaz uredan, rađena je laringoskopija i detektovan suficijentan prostor za disanje. U više navrata ambulantno je lečen parenteralnim antihistaminicima i kortikosteroidima, sa kratkotrajnim,



Slika 1. Klinička prezentacija sindroma gornje šuplje vene

Figure 1. Clinical presentation of superior vena cava syndrome

gered by the applied compresses. Over the next month and a half, the patient experienced recurring episodes of facial swelling, most pronounced in the mornings, occasionally accompanied by hoarseness. The patient sought medical attention from a primary care physician who initiated antibiotic therapy, which unfortunately did not alleviate the swelling and redness. Subsequently, the patient was evaluated by an otolaryngologist, hematologist, pulmonologist, and dermatologist. A chest X-ray revealed no abnormalities, and laryngoscopy indicated adequate breathing space. The patient underwent outpatient treatment with parenteral antihistamines and corticosteroids on multiple occasions, leading to short-term and incomplete improvement. Additionally, the patient noted a progressive increase in swelling over time and reported experiencing nighttime breathing difficulties.

In addition to the current symptoms, the patient has a history of psoriasis for four years, receiving systemic therapy with methotrexate. The patient also has a history of arterial hypertension and is on beta-blocker therapy.

Upon admission, the patient exhibited facial and neck swelling, filled jugular fossae, a plethoric appearance, and accentuated collateral vessel markings on the anterior chest wall (**Figure 1**).

Due to a clinical suspicion of superior vena cava syndrome, a repeat chest X-ray was conducted.

Chest and heart radiograph: Preserved bilateral lung parenchymal transparency. Normal presentation in the hilar regions. Hemidiaphragms appeared arched and distinctly contoured. Elevated right hemidiaphragm. Clear cardiophrenic sinuses. Heart in a normal position (**Figure 2A**).

Given the clinical findings suggestive of SVCS, a pulmonologist was consulted, who recommended a chest a MSCT.

MSCT of the lungs and abdomen: a tumor mass in the right lung measuring 21x36x54 mm, leading to stenosis of the right lobar bronchus, with hilar and mediastinal propagation and infiltration. The described mass resulted in stenosis of the upper lobar bronchus and infiltration of the superior vena cava (SVC) with intraluminal subocclusive thrombosis spanning approximately 75 mm, affecting both the right and left brachio-

nekompletnim poboljšanjem. Takođe pacijent navodi da otok vremenom progredira, da se javlja i otežano disanje u toku noći. Od ostalih podataka pacijent navodi da se četiri godine leči od psorijaze, na sistemske terapije metotreksatom. Leči se od arterijske hipertenzije, na terapiji beta antagonistom.

Na prijemu se kod pacijenta detektuje otok lica i vrata, ispunjene natključne jame, pletoričan izgled, na prednjem zidu grudnog koša naglašen kolateralni crtež krvnih sudova (**Slika 1**).

Zbog kliničke sumnje na sindrom gornje šuplje vene, ponovljen je radiogram pluća.

Radiogram pluća i srca. Transparencija plućnog parenhima obostrano očuvana; hilusi uredne radiološke prezentacije; hemidijafragme lučne, jasno konturisan; desna hemidijafragma elevirana; KF sinusi slobodni; srce urednog položaja (**Slika 2A**).

S obzirom na kliničku sumnju na SVCS, konsultovan je pulmolog koji indikuje multislajсну skenersku koronarnu angiografiju (MSCT) grudnog koša.

MSCT pluća i abdomena: Tumorska promena desnog plućnog krila 21 x 36 x 54 sa stenozom desnog lobarnog bronha, sa hilarnom i mediastinalnom propagacijom i infiltracijom. Opisana promena stenozira bronh za gornji režanj, vrši infiltraciju VCS sa intralumanom subokluzivnom trombozom na dužini segmenta oko 75 mm koja propagira i desnu i levu brahiocefaličnu venu. Distalno od opisane tromboze VCS komprimovana i meri se do 6 mm. Suspektne trombotične mase u desnoj veni supklaviji i ušću leve v. supklavije i VJI. Subokluzivna tromboza VCS i obe brahiocefalične vene. Edem laringealnih struktura u subglotisom delu, bez prikazivanja lumena. Mediastinalna i cervikalna patološka limfonodomegalija, konglomerat limfonodusa supkarinalno koji se meri do 40 mm. Desnostrana peluralna efuzija. Nodu-

cephalic veins. Distally from the described thrombosis, the SVC is compressed, measuring up to 6 mm. Suspected thrombotic masses were noted in the right subclavian vein and at the confluence of the left subclavian vein and internal jugular vein. Subocclusive thrombosis involving the SVC and both brachiocephalic veins was evident. Edema was observed in the laryngeal structures at the subglottic level, obscuring the lumen. Pathological lymphadenopathy was present in the mediastinum and neck, with conglomerated subcarinal lymph nodes measuring up to 40 mm. A right-sided pleural effusion, nodular lung changes bilaterally, and a focal TSCT lesion in the right lobe of the liver were noted. Renal fusion was also observed with right-sided presentation (**Figure 2B and C**).

Following referral to a pulmonologist, the patient underwent bronchoscopy with pathological verification, confirming the diagnosis of lung adenocarcinoma. Radiotherapy and oncological treatment were initiated as per protocol.

Discussion

The incidence of SVCS in America is reported to be 1 in 15,000 individuals, as per literature data [3]. The causes of SVCS can be categorized as either exogenous, involving compression by a tumor mass, fibrotic or inflammatory processes, or endogenous, such as the presence of thrombotic masses within the vein itself compromising venous flow [4]. Often, these two causes can coexist. The syndrome was initially described in 1757, attributed to a syphilitic aneurysm, and subsequently associated with pulmonary tuberculosis and infections. Originally, the syndrome was linked primarily to fibrotic processes and mediastinal lymphadenopathy in pulmonary

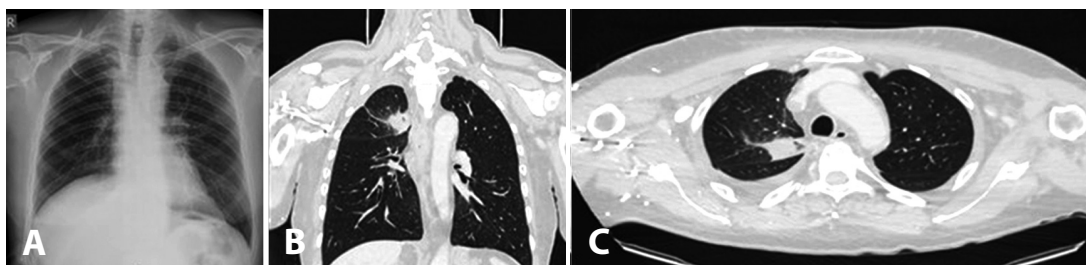


Figure 2. Chest X-ray and lung MSCT

Slika 2. Radiogram grudnog koša i MSCT pluća

alrne promene u plućima obostrano. Fokalna TSCT lezija desnog lobusa jetre. Fuzija bubrega sa desnostranom prezentacijom (**Slika 2B i C**).

Pacijent je upućen pulmologu, gde je urađena bronhoskopija sa PH verifikacijom, postavljena dijagnoza adenocarcinoma pluća; pacijent započeo radioterapiju i onkološko lečenje po protokolu.

Diskusija

Učestalost SVCS, po podacima u literaturi, iznosi 1 : 15.000 u Americi [3]. Uzroci nastanka mogu biti egzogeni, tj. kompresija tumorskom masom, fibroznim ili zapaljenskim procesom, ili endogeni, tj. prisustvo trombotičnih masa u samoj veni sa kompromitovanim venskim protokom [4]. Neretko se ova dva uzroka kombinuju. Sindrom je prvi put opisan 1757. godine, kao posledica sifilisne aneurizme, kasnije su najčešće opisivani slučajevi u vezi sa tuberkulozom pluća i infekcije. Inicijalno, sindrom je najčešće opisivao kao posledica fibroznih procesa i mediastinalne limfadenopatije kod tuberkuloze pluća, dok se u 20. veku registruje veliki porast broja pacijenata sa sindromom gornje šuplje vene, dominantno kao posledica maligniteta. Najčešći uzroci su tumori pluća, limfomi, tumori štitne žlezde, značajno ređe benigni tumori mediastinuma i infekcije [5–7]. Iako znatno ređe, opisani su i benigni tumori kao uzrok nastanka sindroma gornje šuplje vene.

U poslednjih par godina, raste broj nemalignih uzroka nastanka sindroma gornje šuplje vene. Po literaturi benigni uzroci zastupljeni su u 30–40% slučajeva, kao posledica tromboze kod ugradnje pejsmejke, nakon kardiohirurških intervencija i primene centralnih venskih katetera, postradijacione fibroze, Behçetove bolesti, ili intratorakalne strume [8, 9].

Kliničke manifestacije sindroma gornje šuplje vene mogu biti prva manifestacija maligne bolesti i razlog zašto se pacijent javlja lekaru. Smatra se hitnim stanjem, zbog mogućeg povećanja intrakranijalnog pritiska i razvoja tromboze, te se preporučuje hitna radioterapija. Po podacima u literaturi, sindrom gornje šuplje vene je marker loše prognoze, iako preživljavanje zavisi od histološkog tipa tumora. Po jednoj studiji, prosečno preživljavanje pacijenata sa ovim sindromom je 101 dan [10].

Razvoj sindroma gornje šuplje vene najčešće je postepen, te je i dijagnostički put do razvoja pune kliničke slike može trajati nede-

tuberculosis cases, whereas in the twentieth century, there was a notable rise in SVCS cases due to malignancies. The most common malignancies causing SVCS include lung tumors, lymphomas, thyroid tumors, and less frequently, benign mediastinal tumors and infections [5–7]. Although much less common, benign tumors have also been identified as a cause of SVCS.

In recent years, there has been an increasing number of non-malignant causes of SVCS. Benign causes account for 30-40% of cases and can be attributed to factors like thrombosis following pacemaker implantation, post-cardiothoracic surgeries and central venous catheter placement, post-radiation fibrosis, Behçet's disease, or intrathoracic goiters [8, 9].

The clinical manifestations of SVCS can often serve as the initial presentation of malignant disease, prompting patients to seek medical attention urgently. SVCS is considered a medical emergency due to the potential for increased intracranial pressure and thrombosis development, thus urgent radiotherapy is recommended. According to literature data, SVCS is associated with a poor prognosis, although survival rates vary depending on the histological type of the tumor. One study reported an average survival of 101 days for patients diagnosed with SVCS [10].

The development of superior vena cava syndrome (SVCS) typically occurs gradually, and the diagnostic process leading to the full clinical picture can span weeks or even months [11].

Clinically, the initial manifestations of SVCS include facial and neck swelling, dyspnea, and orthopnea, often accompanied by a sensation of "fullness in the head". As the obstruction progresses, a plethoric appearance may develop, along with swelling of the upper extremities and pronounced collateral vessel markings on the anterior chest wall. Conjunctival suffusion and cyanosis can also occur. The most severe signs include cerebral edema and laryngeal compression, which are life-threatening conditions [12, 13].

The diagnosis of SVCS is primarily clinical, but there are no universally defined criteria for making the diagnosis or assessing the severity of the patient's condition. Definitive diagnosis requires imaging methods, which

ljama, pa i mesecima [11]. Klinički, početna manifestacija je otok lica i vrata, dispneja i ortopneja, neretko pacijenti navode i „osećaj punoće u glavi“. Kasnije, kako opstrukcija progredira, razvija se pletoričan izgled, otok gornjih ekstremiteta i naglašen kolateralni crtež prednjeg torakalnog zida, sa sufuzijom konjunktiva, cijanozom. Kao najteži znaci opisuju se cerebralni edem i kompresija larinksa, kao životno ugrožavajuća stanja [12, 13].

Dijagnoza je klinička, ali ne postoje jasno definisani kriterijumi za postavljanje dijagnoze, niti za procenu stepena težine stanja pacijenta. Definitivna dijagnoza zahteva primenu imidžing metoda, koje su neophodne za potvrdu i utvrđivanje uzroka nastanka.

Ne postoji jedinstveni protokol lečenja sindroma gornje šuplje vene. Lečenje zavisi od uzroka nastanka, multidisciplinarno sagledavanje neophodno je u slučaju malignog uzroka nastanka sa odlukom o daljem radiohemoterapijskom protokolu, dok se u slučaju tromboze primenjuje antikoagulatna terapija ili tromboliza [12].

Zaključak

Sindrom gornje šuplje vene jedan je od ređih uzroka nastanka otoka lica i vrata. Rezi-stentnost na primenu antialergijske terapije, dispneja i ortopneja, čak i u slučaju odsustva kompletne kliničke slike, pobuđuje sumnju na ovo stanje. Uredan nalaz radiograma grudnog koša ne isključuje dijagnozu, već je neophodno dalje ispitivanje radi isključivanja ovog životno ugrožavajućeg stanja.

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are essential for confirming and determining the underlying cause.

There is no standardized treatment protocol for SVCS, as management depends on the underlying cause. A multidisciplinary approach is crucial in cases, especially in cases of malignant etiology, involving decisions regarding further radiotherapy or chemotherapy protocols. In cases of thrombosis, treatment may involve anticoagulant therapy or thrombolysis [12].

Conclusion

Superior vena cava syndrome (SVCS) is considered one of the less common causes of facial and neck swelling. Resistance to antiallergic therapy, coupled with symptoms like dyspnea and orthopnea, can raise suspicion of this condition even in the absence of a complete clinical picture. It is important to note that a normal chest X-ray does not definitively rule out SVCS, and further investigation is necessary to exclude this potentially life-threatening condition.

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