

Case Report**Hemorrhagic varicella in laryngeal carcinoma case****Rano Aditomo*, Dwi Antono*/*****Department of Otorhinolaryngology Head and Neck Surgery,
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Semarang**ABSTRACT**

Background: Hemorrhagic varicella is a complication that usually occurs in patients with immune disorders, on immunosuppressive therapy, or hematologic malignancies such as leukemia. **Purpose:** To comprehend a rarely found hemorrhagic varicella in head and neck malignancies. **Case report:** A case of laryngeal carcinoma with hemorrhagic varicella in a 44-year-old man. Dermatological examination revealed hemorrhagic polymorphic vesicles, generalized pustular psoriasis, erosion, and crusting. Hemorrhagic varicella which appears in head and neck malignancy is a very rare form of varicella. **Clinical question:** Does a comprehensive diagnostic panel test is needed for management of hemorrhagic varicella in head and neck malignancies? **Review method:** Exploring the literatures of hemorrhagic varicella in head and neck malignancies, including laryngeal carcinoma through Cochrane, PMC, PubMed, and Medline databases. **Result:** The literature search obtained 318 articles in PubMed, 11 articles in Medline, and none in Cochrane, which were relevant with the topic. Only 1 article was in accordance with inclusion and exclusion criteria. Research which was conducted by Elizabeth et al. in Philippine (2011) on Pediatric Infectious Disease and Hematology-Oncology Services, found out of 26 immunocompromised patients who developed varicella, only 22 charts were available for review. Of these patients, 13 were male and 9 were female. The highest incidence occurred from 0 to 5 years old (41%). Twenty patients had an underlying malignancy in the form of leukemia (14%) and solid organ tumors (6%) including nasopharyngeal carcinoma. **Conclusion:** It requires a comprehensive diagnostic panel test for implementation of appropriate therapy and improved outcome.

Keywords: hemorrhagic varicella, immune disorders, head and neck malignancy, laryngeal carcinoma**ABSTRAK**

Latar belakang: Varisela hemoragik merupakan komplikasi yang biasanya muncul pada seseorang dengan gangguan imun, dan seseorang dengan terapi immunosupresif, atau keganasan hematologi seperti leukemia. **Tujuan:** Untuk memahami kasus varisela hemoragik pada keganasan kepala leher yang jarang ditemukan. **Laporan kasus:** Varisela hemoragik yang ditemukan pada seorang laki-laki usia 44 tahun yang menderita keganasan kepala leher, yang sedang menjalani kemoterapi. Pada pemeriksaan dermatologis didapatkan vesikel polimorfik hemoragik, psoriasis pustula generalisata, disertai erosi dan krusta. Varisela hemoragik pada keganasan kepala leher merupakan bentuk dari varisela yang sangat langka. **Pertanyaan klinis:** Pada penderita keganasan kepala-leher yang menjalani kemoterapi dan terkena varisela, apakah diperlukan pemeriksaan panel diagnostik yang lengkap dan menyeluruh untuk penatalaksanaannya? **Telaah literatur:** Pencarian berbasis bukti mengenai varisela hemoragik pada keganasan kepala leher dilakukan dengan mengkesplorasi database Cochrane, PMC, PubMed dan Medline dengan kata kunci “immunocompromised” AND “Hemorrhagic varicella”. **Hasil:** Didapatkan 318 artikel di PubMed, dan 11 artikel di Medline. Hanya 1 artikel yang sesuai dengan kriteria inklusi dan eksklusi. Sebuah penelitian yang dilakukan oleh Elizabeth et al. di Filipina (2011) pada layanan Penyakit Infeksius Pediatri dan Hematologi-Onkologi, hanya 22 kasus yang dapat ditinjau dari 26 pasien dengan kelainan imun yang mengidap varicella berat. Dari pasien ini, 13 adalah laki-laki dan

9 perempuan. Insiden tertinggi terjadi pada usia 0 hingga 5 tahun (41%). Dua puluh pasien memiliki keganasan dalam bentuk leukemia (14%) dan tumor organ padat (6%) termasuk karsinoma nasofaring. **Kesimpulan:** Pada kasus ini diperlukan tes panel diagnostik yang komprehensif untuk pemberian terapi yang tepat dan berhasil baik.

Kata kunci: varisela hemoragik, kelainan imun, keganasan kepala leher, karsinoma laring

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INTRODUCTION

Varicella is an acute infectious disease caused by a varicella-zoster virus (VZV) affecting all people around the world irrespective race or gender.¹⁻³ This disease mainly affects children. Approximately 90% of cases occur in children aged under 10 years, and less than 5% at the age of more than 15 years.⁴ The incidence of varicella disease in America is estimated at 3.1-3.5 million each year.¹ In Indonesia, there is a scarcity in data on national cases of varicella or chickenpox.

Pathogenesis of varicella begins with multiplication of VZV entering through the respiratory tract and oropharynx mucosa, followed by spread of the virus through blood and lymph (primary viremia). The virus multiplies again after reaching the organs of the reticuloendothelial system and spreads to the blood, causing secondary viremia. VZV enters various organs, especially the skin and mucosal layers.^{1,3}

The common clinical symptoms of varicella include prodromal symptoms such as fever, malaise, chills, headache, anorexia, back pain, or sore throat, 2-3 days before skin lesions appear. Skin lesions first appear on the face and head, and then spread rapidly to the trunk and limbs. The initial lesions are erythematous macules which rapidly develop into papules, vesicles, pustules, and crusts.⁵

In patients with immune disorders or hematological malignancies such as leukemia, varicella can cause serious complications such as hemorrhagic varicella, encephalitis, pneumonitis, and hepatitis. This can lead to a significant increase in morbidity and mortality. Individuals with malignancy who undergo an intensive chemotherapy or radiotherapy can increase life expectancy, but will make varicella a frequent problem for them.⁶⁻⁸

Tzanck test of lesion vesicle showed multinucleated giant cells. The diagnosis was confirmed by isolating VZV on cell culture inoculated with vesicle fluid, blood, cerebrospinal fluid, or infected tissue, as well as by immunofluorescence, and PCR.⁹⁻¹¹

A case of rare complications of hemorrhagic varicella in a patient with head and neck malignancy undergoing chemotherapy was reported.

CASE REPORT

A 44-year-old man diagnosed with stage IV laryngeal carcinoma (T4N0M0) with ECOG PS 2, came to the Emergency Department of Dr. Kariadi Hospital in lethargic condition. One day prior to hospital admission, the patient complained of weakness after 4 times watery diarrhea with no mucus in stool. The patient also had fever and watery spots all over the body. The skin spot flaked off and bled. (Figure 1)



Figure 1. Clinical photo of a 44-year-old-man with laryngeal carcinoma and hemorrhagic varicella.

The patient also complained of having swollen eyes, dizziness, and abdominal pain. Approximately 4 days before admission, the patient complained of fever and watery spots in the whole body (Figure 2). Based on these circumstances, when he came the ENT clinic at Dr. Kariadi Hospital, the patient was then consulted to the Skin Clinic. Patient received oral medication and ointments. After taking the drug, the patient's condition did not improve, the spots got worse, and the patient experienced weakness and fever. The patient was then taken to Emergency Room (ER). In there, the patient defecated black stool, and emitted black liquid through nasogastric tube (NGT). Regarding the diagnosis of stage IV ECOG 2, T4N0M0 laryngeal carcinoma, the patient had received phase-2 cisplatin 5FU chemotherapy two weeks earlier. After chemotherapy, the patient felt nauseous, but no vomiting, nor diarrhea. He was still active, breathy respiration, and got liquid intake through NGT. Anamnesis revealed that there was a family member who had small pox infection 3 weeks earlier, but had recovered well.



Figure 2. Vesicle rupture, flaking off and easily bled skin on (A) face, and (B) all over the body

On physical examination, the patient was *compos mentis*, and weak. The blood pressure was 100/60 mmHg, pulse 120/minute, and respiratory rate 28/minute, body temperature 37.2°C, and oxygen saturation level 97%. His head featured plenty black crusts and hyper pigmented vesicles. There was no conjunctival icterus, nor pallor. Edema was found in the superior and inferior of both eyelids, the eye vision and eyeballs movement were within normal limits. Lung auscultation revealed soft and moist rhonchi, while the heart was within normal limits. The abdomen examination found that the liver and spleen were not enlarged. Extremity examination found jaundice, cyanosis, clubbing finger and acral coldness.

Examination of the ENT area showed vesicles and crusts on the right and left auricles. In the ear canal there was no earwax, discharge, edema, nor hyperemia. Tympanic membrane was intact, slightly dull, not hyperemic, and no retraction. External nasal examination showed crusts, and intact or broken vesicles. In the nasal cavity, mucous membrane was normal, there was nasal mucous, no mass, and an NGT hose was attached. In the neck, a tracheal cannula was fixed, the airway was smooth, and the lymph nodes were not enlarged.

Laboratory examination revealed Hb 14.8 g%, leukocytes 18.1 thousands/mm³, platelets 66.3 thousands/mm³, AST 3572, SGPT 788, random blood glucose 161, urea 60, creatinine 1.0, Gamma GT 424, potassium 3.9, sodium 130, chloride 109, albumin 3.4, total bilirubin 1.04. Based on the results of the lab examination, it was concluded that the patient had leukocytosis, thrombocytopenia, increased liver function and hyponatremia. The test results showed that HbSAg, anti-HAV and anti-HBV were negative; activated partial thromboplastin time 108.6, D-dimer >5090, fibrinogen titer 177.9. Based on these results, the Internal Medicine Department of Kariadi Hospital further diagnosed

the patient with disseminated intravascular coagulation, hepatocellular injury, azotemia, moderate dehydration, acute diarrhea, and melena. To treat hemorrhagic varicella, the Dermatologist gave acyclovir 5x 800mg orally, chlortrimethone 3 x 4mg, gentamicin cream applied every 12 hours on broken vesicles, and salicylate powder applied every 12 hours on the unbroken vesicles. In addition, the patient was given 0.9% NaCl intravenous drip, oxygen flow through tracheal stoma, liquid diet through NGT; ceftriaxone and omeprazole intravenous; sucralfat syrup, N-acetyl cysteine 2, and paracetamol orally.

From the description of the patient's condition, this study aimed to identify hemorrhagic varicella as a complication in head and neck cancer undergoing chemotherapy.

REVIEW METHOD

Evidence-based literature search with keywords "immunocompromised" AND "hemorrhagic varicella" was performed through Cochrane, PubMed, and Medline databases. The inclusion criteria were chemotherapy in head and neck malignancies. The exclusion criteria were chemotherapy in other organ malignancies.

RESULT

The literature search obtained 318 articles in PubMed, 11 articles in Medline, and none in Cochrane, which were relevant with the topic. Only 1 article in accord with inclusion and exclusion criteria. Research was conducted by Elizabeth et al. in Philippine (2011) on Pediatric Infectious Disease and Hematology-Oncology Services. Out of 26 immunocompromised patients who developed varicella during the study period, only 22 charts were available for review. Of these patients, 13 were male and 9 were female. The highest incidence occurred from

0 to 5 years old (41%). Twenty patients had an underlying malignancy in the form of leukemia (14%), and solid organ tumors (6%) including nasopharyngeal cancer. Diagnosis of hemorrhagic varicella was based on the characteristics of generalized papulovesicular rash, vesicles rupture, flaking off and easily bled skin on face and all over the body.

DISCUSSION

A study conducted by Escaño-Gallardo et al.¹² at Department of Hematology-Oncology and Pediatric Infectious Diseases, Philippine General Hospital, reported 26 immunocompromised patients suffering from varicella between January 1999 and December 2004. It was reported that 20 patients (90.9%) had malignancies, such as leukemia (14%) and organ tumors (6%), and 1 patient (4.5%) had head and neck malignancy (nasopharyngeal carcinoma). The most common symptom was skin rash (68.2%). Nine patients (40.9%) had complications such as pneumonia (18.2%) and sepsis (9.1%). Two patients were mortalities: a 9 year-old-boy with leukemia and developed multiple complications (pneumonia, sepsis, and bleeding); and a 6 year-old-boy with rhabdomyosarcoma and pulmonary tuberculosis with complications including pneumonia, and septic shock.¹² In some patients with immune disorders, acute varicella forms can be accompanied with disseminated intravascular coagulation (DIC) vasculitis, or idiopathic thrombocytopenic purpura (ITP) which is the leading cause of death in patients with varicella.¹⁶ In our reported case, the patient suffered from laryngeal carcinoma and was undergoing cisplatin 5FU chemotherapy, which leading to decreased patient's immunity, and resulting in hemorrhagic varicella.

The patient was hospitalized in the isolation room, and his condition deteriorated with blood pressure 80/50mmHg, even though he had been given Vascon 0.05 mcg/

kgBW/mt. Test results of Activated Partial Thromboplastin Time (APTT) 108.6, D-dimer >5090ng/ml, fibrinogen titer 177.9 mg/dl, and was diagnosed with disseminated intravascular coagulation (DIC). On the 3rd day the patient died.

Tzanck test of vesicle base scrapings is very helpful in diagnosing varicella by finding multinucleated cells and epithelial cells containing acidophilic intranuclear inclusion bodies.^{1,17} Our patient had Tzanck examination of a bullous base swab, but no giant cells and inclusion bodies were found. Histopathological examination revealed a ruptured intraepidermal vesicle containing blood, lymphocytes and histocytes, which supported the diagnosis of hemorrhagic varicella. On previous case report, there was a case of hemorrhagic varicella on a 3-year-old girl with a chief complaint of watery spots on her body. History of chickenpox was denied. On physical examination, vesicles appeared as dark red, polymorph, and generalized, crusted erosion.¹²

In conclusion, intermediate variability in immunocompromised patients is associated with increased rates of morbidity and mortality. Hemorrhagic varicella is a very rare form of varicella. It is necessary to have a complete and comprehensive diagnostic examination panel, for the administration of appropriate therapy.

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