

Apurulent Parapharyngeal Abscess

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Citation

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Abstract

Parapharyngeal abscesses are significantly less common today as compared to the preantibiotic era. These infections are relatively obscure to many practitioners and are often mismanaged with a tendency to under estimate the extent and severity of the illness. Clinical presentation of parapharyngeal abscess may vary in different clinical conditions. Formation of abscess that requires an immunological response with leucocytosis may be absent in serum immunocompromised patients particularly in marked pancytopenia. We report a case of a parapharyngeal abscess in an immunocompromised patient, which was apurulent with relevant discussion.

INTRODUCTION

Although antimicrobial therapy has reduced the incidence of parapharyngeal abscesses, these infections remain an important clinical entity. With the development of a wide range of chemotherapy agents to fight cancer and with the rise in patients with AIDS and HIV infections we are looking at a higher rate and altered clinical presentations of patients deep neck space infections. The classical abscess presentation of an angry, red swelling with fever might not be prominent and a high index of suspicion is required.

Clinical features and intraoperative findings may differ from the classical "pus" in these cases. Here we report an immunocompromised patient who had an apurulent parapharyngeal abscess.

CASE REPORT

A 36-year-old gentleman who had been diagnosed to have atypical chronic myeloid leukemia was admitted to the hematology ward for a herpes zoster infection and dehydration. He had just completed his fifth cycle of chemotherapy fourteen days ago. He was noted to have oral thrush, a spiking temperature and a herpes zoster infection over his right L1 dermatome area. A full blood count investigation revealed that patient was pancytopenic. On the fifth day of admission the patient complained of difficult in opening his mouth due to pain, a right neck swelling and pain on swallowing. On examination he appeared ill and had a diffuse right upper cervical region neck swelling which was warm, tender and firm on palpation. Oral examination revealed that patient had trismus, oral thrush and a medially

displaced right tonsil. The patient had multiple purpuras all over his body and had a white blood count of $9 \times 10^3/L$ and a platelet count of $2 \times 10^3/L$. A CT scan neck (Figure 1 and 2) revealed an ill-defined area of hypodensity measuring 3.4×6.3 cm at the right parapharyngeal space, giving the impression of a right parapharyngeal collection/abscess. Patient was on broad-spectrum intra venous antibiotics, which were started empirically since admission. The patient was further stabilized by our hematology team and a neck exploration and drainage of abscess was planned. A full informed consent was taken from the patient and his next of kin. Intraoperative findings revealed multiple loculated areas in the right parapharyngeal space, which was filled with clear serous fluid with very minimal slough. The patient's conditions gradually worsened despite operative intervention and he developed hypovolumic and septic shock due to persistent pancytopenia in spite of aggressive management in the intensive care unit. Pus and blood culture and sensitivity revealed no organisms. On the fourth day post surgery the patient expired.

Figure 1

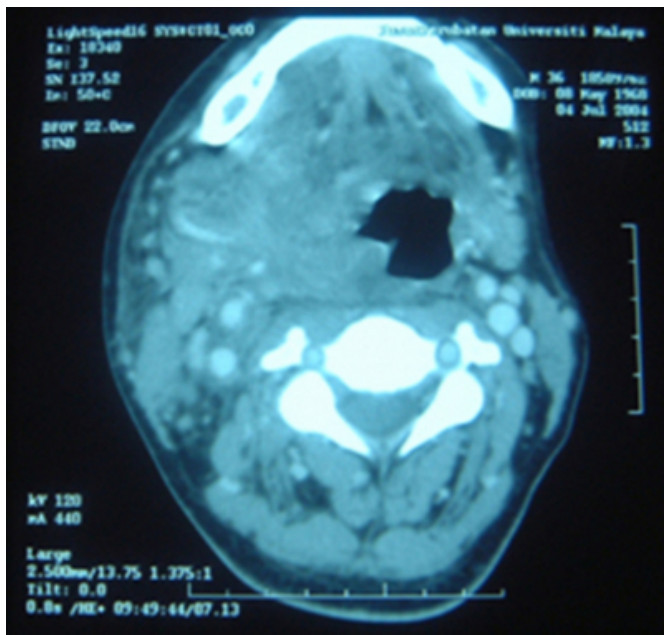
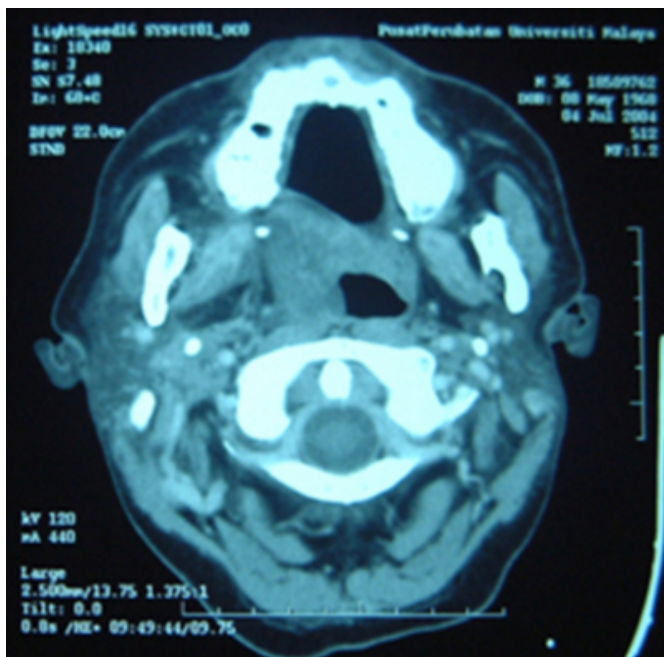


Figure 2



DISCUSSION

The parapharyngeal space is defined as an inverted pyramid, the base coinciding with the skull base and the apex located at the greater cornu of the hyoid bone. It is bounded anteriorly by the pterygomandibular raphe; medially by the superior constrictor muscle, the tonsil and the soft palate; laterally by the pterygoids and the ramus of the mandible anteriorly and the deep lobe of parotid posterior belly of the digastric muscle posteriorly; and posteriorly by the vertebral

column and paravertebral muscles. The styloid process divides the parapharyngeal space into two compartments, a pre styloid and a post styloid space. It contains the carotid sheath and its contents, ascending pharyngeal arteries, deep lobe of parotid, sympathetic trunk, and cranial nerves IX, XI, XII.

The causes of parapharyngeal abscess are attributed to dental infections, tonsillar infections, foreign body in the oropharynx, intravenous drug abuse, tuberculosis, skin infections, peritonsillar abscess and trauma₁.

Diabetes Mellitus is the most common associated systemic disease with parapharyngeal abscess preceded by Human Immunodeficiency Virus infection₁. It has been established that lipopolysaccharide by bacteria and infection mediated up regulation of cytokines synthesis worsens diabetes in these patients₂. Laboratory investigations usually revealed an elevated white blood count except for patients with HIV infection or AIDS or those who are immunocompromised as in this case. Pus, which is a purulent inflammatory exudates rich in leukocytes and parenchymal cell debris, fails to form in patients who are severely immunocompromised such as in this reported case.

Bacteriologic pattern of parapharyngeal abscess is usually a mixed growth and includes anaerobes and aerobes. The most common bacterial organisms are *Streptococcus Viridians* followed by *Staphylococcus Epidermis*₁. Negative results may be from liberal use of antibiotics.

Contrast enhanced CT scan is the radiological evaluation of choice in patients suspected to have parapharyngeal abscesses₃. An abscess is distinguishable from cellulitis or phlegmon by a homogenous area of low attenuation (fluid density) and a lining enhancement of contrast₃.

The classic teaching warns that the parapharyngeal space should never be approached by an intraoral route due to lack of vascular control and inability for direct visualization₄. Although intraoral route of drainage whether Image Guided Stereostatic surgery or not has been advocated by some to be safe and effective it should be proceeded only in highly selected patients₄. It is contraindicated when there has been a hemorrhage.

Some authors have described non-surgical management for selected cases of parapharyngeal abscess but keeping in mind that incision and drainage should not be withheld without clear evidence of improvement₅. A dilemma arises

in patients who are pancytopenic with parapharyngeal abscesses, as whether to operate or to treat medically. A full informed consent is taken after discussion with the patient and relatives. If surgery is deemed as the choice of treatment than it has to done only if there is a proper blood bank and intensive care unit back up.

Parapharyngeal abscesses if not treated results in life threatening complications such as airway obstruction, mediastinitis, vascular complication, and septicemia.

CONCLUSION

In conclusion parapharyngeal abscess still occur in this era of antibiotics and is life threatening as it was for our patient. We hope that this case serves as a reminder that the immunocompromised may also present with this disease but with different presentations and findings. Thus a high index of suspicion is vital for early diagnosis and treatment.

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