Purulent Pericarditis: A Case of Contributory Negligence

Yogesh Tyagi*, Alexander F Khakha, S K Naik*****

*Assistant Professor *** Assistant Professor Department of Forensic Medicine, Lady Hardinge Medical College & Associated Hospitals, New Delhi-110001 **Senior specialist & Head, Department of Forensic Medicine, Vardhman Mahavir Medical college & Safdarjung Hospital, New Delhi-110029 Email:ytyagi6@rediffmail.com

Abstract

Purulent pericarditis is a rare but life-threatening bacterial infection. Most patients have preceding or concurrent infection that is the source of pericarditis. These infections include pneumonia, meningitis, acute osteomyelitis, and acute soft tissue infections. In the present case bacterial cellulitis was the source of infection. Both the doctors and the patient contributed in act of negligence, which lead to the death the patient

Key words: Closed fracture, Cellulitis, Purulent pericarditis, Contributory Negligence

Introduction

Health has been declared a fundamental human right. The current health care services in India are predominantly urban oriented and accessible only to a small part of population. 1 In India doctor patient ratio is very poor. Public health system is over- crowded. More than 50% percent population does not have access to health care facilities. People are reluctant to go to public hospitals due to overcrowding and delay in treatment. The patients attending to the public hospitals are mostly poor daily wages worker. They cannot afford to lose working days needed for treatment at government hospitals. They cannot afford the expenses of private set ups either. Patients are forced to go to the unqualified practitioners for medical advice. There are more unqualified doctors than qualified and trained doctors. There is no appropriate authority to have check over practice of unqualified medical practitioners. The present author has come across such a case where one healthy young boy died due to the complications arising out of negligence on the parts of the orthopedic surgeon, self and unqualified medical practitioner, while treating fracture of right fibula.

Correspondence

Dr. Yogesh Tyagi, Assistant Professor, Department of Forensic Medicine, Lady Hardinge Medical College & Associated Hospitals, New Delhi-110001

Case History

An apparently healthy young boy of eighteen years old alleged to have twisted his right ankle while jumping down from a running bus. Soon after, he developed pain and swelling on his right ankle. He attended orthopedics emergency of Safdarjung Hospital. X Rays were advised and hairline closed fracture of lower end of right fibula was diagnosed. A POP cast was applied to immobilize the joint for three weeks. Oral pain killer was prescribed with advice to attend the OPD next day.

Next day, the patient had complained of pain at the site of fracture and POP cast. He was reluctant to go to the hospital again and rather he preferred to consult an unqualified local medical practitioner, who gave him some loose medicines without label or prescription. After three to four days he developed fever and chill. His symptoms persisted even after two weeks of treatment with the same doctor. When he developed dyspnea, then again he went to the same doctor for relief. Not able to judge the severity of the case, the local medical practitioner did not refer him to any higher institution or referral centre. He gave him two injections and asked the patient to come next day. On the same night, when his condition deteriorated and the patient fell unconscious, he was taken to Safdarjung Hospital where he was declared brought dead.

Autopsy Findings

Rigor mortis was present over whole body. POP cast was present over right foot and lower half of leg. On removal of POP cast, outer surface of left ankle showed few minute abrasions and features of cellulitis with reddish inflamed skin. On dissecting the inflamed region, pus was detected in subcutaneous soft tissues (Figure 1). A sample of purulent material was preserved for microbiological examination, taking aseptic measures. All the natural orifices were normal. Conjunctivae and oral mucosa were normal. On opening the chest cavity, pericardial sac was found to be enlarged and inflamed, containing about 400 ml purulent fluids (Figure 2). A sample of purulent fluid was preserved for microbiological examination, taking aseptic measures. Whole epicardium was inflamed and multiple pus pockets were present (Figure 3). No vegetations were present over the heart valves. Both lungs were congested and edematous with oozing of hemorrhagic fluids on cut sections. Brain was congested. Stomach was empty and walls were congested.

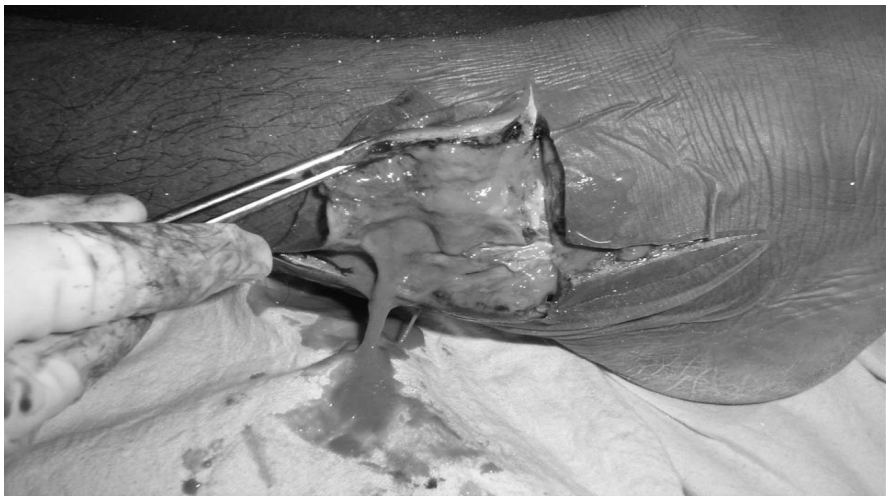

Figure 1

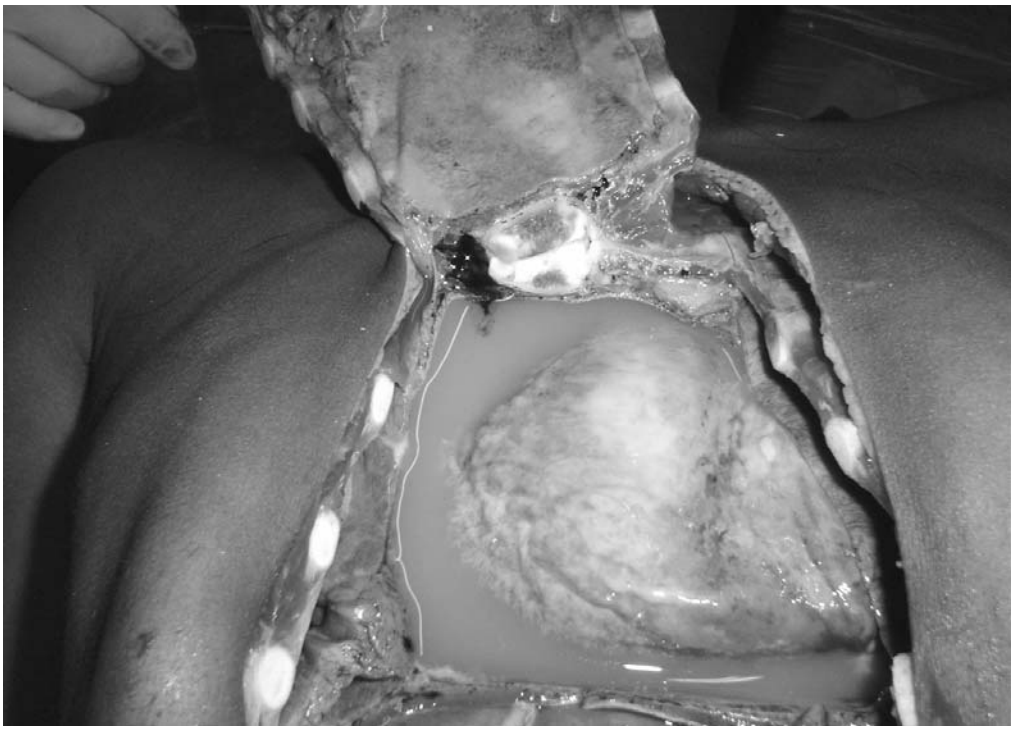

Figure 2

Figure 3

Microbiological Examination

Staphylococcus aureus was reported on both the samples preserved for microbiological examination.

Discussion

Clinical history and autopsy findings suggest this to be a case of purulent pericarditis secondary to cellulitis over left ankle.Cellulitis is a diffuse inflammation of connective tissue with severe inflammation of dermal and subcutaneous layers of the skin. Cellulitis can be caused by normal skin flora or by exogenous bacteria, and often occurs where the skin has previously been broken. Skin on the face or lower legs is most commonly affected though cellulitis can occur on any part of the body

Cellulitis is caused by bacteria entering the dermal and subcutaneus layers of skin, usually by way of a cut, abrasion, or break in the skin. This break does not need to be visible. 2 Group A *Streptococcus* and *Staphylococcus* are the most common of these bacteria, which are part of the normal flora of the skin but cause no actual infection while on the skin's outer surface. 3 Cellulitis can develop in as little as 24 hours or can take days to develop. Pain, fever with chill are the usual features present in most cases. The affected area is diffusely swollen, hot, red and painful. 4

The pericardium, which is composed of visceral and parietal layers, envelops the heart and great vessels. In healthy adults, the pericardial space contains about 5 - 30 ml of clear fluid, which has the appearance of a plasma ultra filtrate.

Purulent pericarditis refers to pericardial fluid that is either culture positive regardless of appearance or purulent appearing despite, in some instances, an inability to obtain a positive culture finding. Patients are acutely ill and exhibit symptoms of sepsis. Rapid evaluation, diagnosis, and treatment are essential.

Symptoms are often nonspecific and include fever, respiratory distress, and tachycardia out of proportion to the degree of fever. Most patients have preceding or concurrent infection that is the source of pericarditis. These infections include pneumonia, meningitis, acute osteomyelitis, and acute soft tissue infections. 5 Immunosuppressive drugs, and other illnesses or infections that weaken the immune system are also factors that make infection more likely.

In the present case patient developed pain at the site of frature for which he continued to take pain killers. Three to four days later he developed pain with fever and chill, for which he consulted an unqualified practitioner. He dispensed him some loose medicines without prescriptions. These unqualified practitioners have a fixed regimen for fever with chill. They prescribe antibiotics, anti malarials, antipyretics with dexamethasone. After two weeks, patient developed fever, and dyspnea due to purulent pericardial effusion. In present case the source of infection was soft tissue infection i.e. cellulitis. He needed emergency diagnostic evaluations and treatment. The unqualified practitioner was not able to assess the severity of case. He gave him some injection, probably some antibiotic for instant relief, rather than referring him to proper person and place. Reluctance to visit public hospital and undue faith on the unqualified medical practitioner ultimately resulted in death of the patient, from otherwise non-fatal closed fracture of fibula.

In the present case everyone contributed in the act of negligence. In the orthopedic department, during application of POP cast, it was not properly padded at bony prominence of ankle joint that lead to irritation and minute abrasions. Patient himself contributed to the act of negligence by not attending the orthopedic OPD again as per the advice, even if he was suffering pain. The

local medical practitioner, who was not qualified for such cases, did not refer the patient to the hospital and keep on giving medicines without knowing the pathology behind the symptoms.

Conclusion

In present case, death occurred from contributory negligence on the parts of the orthopedic surgeon, patient and unqualified medical practitioner. However, it was difficult to conclude what came first i.e. cellulitis or pericarditis. But on the basis of case history and post mortem findings, sequence of pathology could have been as follows- lower end of right fibula of the boy was fractured accidentally. POP cast was not properly padded at ankle joint which leads to irritation and minute abrasions. Cellulitis developed as a result of invasion of bacteria through the abrasions. Patient developed pain and later fever and chill due to improper application of POP cast and cellulitis. Further, development of dyspnoea, fever and chill two weeks later was due to purulent pericardial effusion and lung edema, complications arising out of cellulitis. Patient died due to cardiac failure as a result of purulent pericarditis.

References

1. Park K, park's Textbook of preventive and social medicine, 16th ed. M/s Banarsidas Bhanot Publishers Jabalpur India; 2000, 18-19.
2. Harrison's Principles of Internal Medicine. 14th ed.Vol.1, McGraw-Hill Book Co; 1998, 888.
3. Silverberg G Steven, Principles and Practices of Surgical Pathology and Cytopathology.Vol-1, 4th ed. Churchill Living Stone (Elsevier); 2006, 68-69.
4. J.C.E.Underwood, General and Systemic Pathology.4th ed. Churchill Living Stone; 2004, 680-81.
5. Silverberg G Steven, Principles and Practices of Surgical Pathology and Cytopathology.Vol-1, 4th ed. Churchill Living Stone (Elsevier); 2006, 1069.