



## “INFECTIVE ENDOCARDITIS: A SILENT KILLER IN DISGUISE”

### Pathology

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### ABSTRACT

Death as such is not an uncommon phenomenon but deaths due to blood transfusions are rare. Such cases attract a lot of controversies involving competency of the doctors, medical institutions and state of health of the health system in that region. Despite advancement in diagnostic and therapeutic procedures, Infective endocarditis carries poor prognosis and high mortality. An alleged case of sudden transfusion death which on autopsy turned out to be death due to complications following dislodgement of septic emboli from Infective endocarditis over heart valves is rare. Present case proves the fact that meticulous collection of samples post transfusion reaction, history and autopsy aids in establishing the actual cause of death rather than alleged one.

### KEYWORDS

Infective Endocarditis, Blood transfusion, Fourniers gangrene, Autopsy.

### INTRODUCTION-

Death as such is not an uncommon phenomenon but deaths due to blood transfusions are rare. Such cases attract a lot of controversies involving competency of the doctors, medical institutions and state of health of the health system in that region. These reactions may be acute which occur within 24 hours or may be delayed for days or months. Blood transfusion reactions may be immune mediated or non immune mediated.<sup>1</sup> Investigation in fatal cases will depend upon the cause of the complication.<sup>2</sup>

Infective endocarditis is haematogenous, systemic infection involving heart structures, and less frequently large blood vessels of the thoracic cavity or foreign materials implanted into heart cavities.<sup>3</sup> Despite major advances in diagnostic and therapeutic procedures, IE still carries a poor prognosis and high mortality. Heterogeneity and ambiguous clinical presentation makes the diagnosis in these cases difficult.

With the simultaneous presence of above mentioned conditions, determining the actual cause of death may be a herculean task. So it becomes imperative to present this case report initially labelled as transfusion related death and later concluded to be death due to septic embolism of Infective endocarditis.

### CASE REPORT-

A 60 year old man with a diagnosed case of Fournier's gangrene was referred to the hospital as the treatment facilities were not available at victim's locality. Immediately after examination patient was advised skin grafting over the left scrotal wound. Routine blood work up revealed leucocytosis and anaemia and hence he was advised pre-operative blood transfusion. Within 10 minutes of transfusion patient developed chills, dyspnoea, slurring of speech and weakness in right side of the body. Transfusion was immediately terminated and he was shifted to ICCU where he succumbed to death after 36 hours. Taking into consideration the possibility of transfusion reaction, direct and indirect Coombs/Anti-globulin test was performed repeatedly and was non-reactive every time. Post transfusion repeat urine samples were also inconclusive for free haemoglobin. A formal inquiry was held by police and body was sent for autopsy.

On external examination, blackish brown discoloration with oedema and pus pockets at places were noted over the left scrotum extending up to the medial aspect of left thigh (figure 1). No other injuries over the body were noted. Routine autopsy was performed and individual organs were observed in detail. Heart was 400 grams in weight. On meticulous dissection, multiple filliform, fungating and friable vegetations were noted over mitral valve leaflets (Figure 2). Similar vegetations were also observed over aortic valve and endocardial surface of the left ventricle. Lungs were edematous and congested.

Both kidneys were intact, granular externally with petechial haemorrhage. On cut section, cystic spaces were seen in both the kidneys. Liver was intact, congested with nutmeg appearance. Brain was intact and vessel congestion was noted. No significant gross changes were observed in other organs.

Opinion regarding cause of death was reserved and all organs were sent for histopathology examination. Valvular vegetations and skin swab from infected scrotum were sent for microbiological culture examination. Histopathology examination from valve cusps revealed histological features of vegetations consisting of bacterial and fungal colonies, fibrin and granulation tissue along with dense infiltrate of neutrophils and lymphocytes (Figure 3). Section from myocardium showed fungal colonies with focal lymphoid collection in interstitium (Figure 4). Culture results of vegetations came out to be positive for candida while skin swab was positive for Kleibshiella, Acinetobacter and Candia species

### DISCUSSION-

There is 2% - 5% lethal outcome in blood transfusion in spite of 1: 12,000 – 1:36,000 wrong blood transfusions.<sup>4</sup> Assessment of lethal blood transfusion errors is a multidisciplinary challenge involving forensic medicine, pathology and immuno-histochemical and immune-haematological aspects to detect the incompatible foreign red blood cells in the samples collected during autopsy.<sup>4</sup> In the present case, necessary samples to rule out transfusion reaction were preserved and later reports regarding contamination of blood sample were ruled out. Also as previously stated, Coombs test was non reactive and no free haemoglobin was detected in post transfusion urine samples. Then what caused the patient to die?

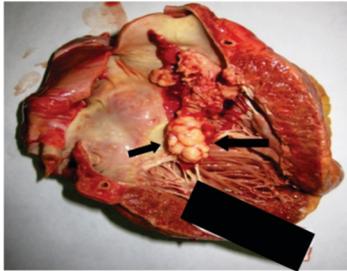
The mortality of infective endocarditis was 100% before the advent of antibiotics.<sup>5</sup> In developed countries it is now reduced to around 30%<sup>5,6</sup> while in India it is still more than 50%.<sup>7</sup> Mitral and aortic valve are most commonly involved.<sup>8,9,10</sup> Complications of infective endocarditis like embolic events, CHF, abscess formation and heart block are known complications.<sup>11</sup>

In the present case, incidentally at the time of blood transfusion septic embolism of the friable vegetation tissue from the valves must have been dislodged and travelled systemically to the brain resulting in unilateral weakness and slurring of speech, thus mimicking a cerebrovascular episode. Source of haematopoietic infection must be from the site of Fournier's gangrene as culture from vegetation over the valves and gangrenous site correlated well for Candida species. The coincidence of timing of blood transfusion and time taken for the presentation of symptoms suggestive of adverse transfusion reaction was such that it almost made everyone believe that the complications were because of transfusion. But meticulous collection of samples post

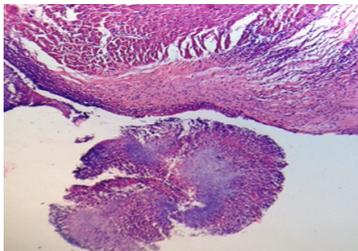
transfusion reaction, history and autopsy helped in establishing the actual cause of death in the case. Prior informed consent, vigilant cross checking of blood bag for blood group of the patient, proper documentation of the events during adverse transfusion reaction will definitely help in preserving the reputation of the profession as noble profession.



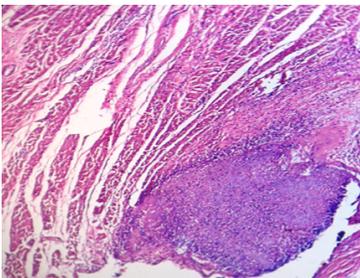
**Figure 1 Fournier's gangrenea**



**Figure 2 : Multiple, filliform and fungating vegetations over valve**



**Figure 3 : Vegetations consisting of bacterial and fungal colonies along with inflammatory infiltrate (H & E; 10 X)**



**Figure 4 : Fungal colonies in myocardium (H & E; 10X)**

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