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**Minimally invasive repair of deep sternal wound infection accompanied by sternal osteomyelitis and sinus tract after thoracotomy with platelet-rich plasma**

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**Aim:** Aim to compare the clinical outcome of platelet rich plasma (PRP) combined with negative pressure wound therapy (NPWT) for patients with deep sternal wound Infection (DSWI) accompanied by sternal osteomyelitis and sinus tract after thoracotomy.

**Method:** A retrospective analysis was made of 62 patients with DSWI accompanied by sternal osteomyelitis and sinus tract after thoracotomy from March 2011 to June 2015. 22 patients admitted from March 2011 to December 2012 were enrolled in the NPWT group, and 40 patients admitted from January 2013 to June 2015 were enrolled in the combined treatment group. In group NPWT, only NPWT was used after debridement. In the combined treatment group, the activated PRP was filled to wound, followed by NPWT. Patients in two groups were replaced with negative pressure every 5 days until 20 d after operation. The clinical related statistics were analyzed.

**Results & Discussion:** The sinus sealing time, wound healing time and hospitalization time of the patients in the combined treatment group were (16 + 8), (27 + 13), (43 + 13) days respectively, which were significantly shorter than those in the NPWT group alone (T value was 3.88 - 4.67,  $P < 0.01$ ). The number of patients undergoing secondary repair operation in the combined treatment group was significantly less than that in the simple NPWT group ( $P < 0.01$ ). The recurrence rate in two groups was similar ( $P > 0.05$ ).

**Conclusion:** PRP combined with NPWT are safe and effective. This method has the advantages of simplicity, less damage, safety and reliability.

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