The Tzanck smear, also known as the Tzanck test, was introduced in 1947 by the Frenchman Arnold Tzanck (Grossman & Silvers, 1992). It is a quick, inexpensive, and noninvasive method for the diagnosis of cutaneous diseases. In 1951, the effectiveness of the Tzanck smear was confirmed for the diagnosis of varicella zoster virus and herpes simplex virus (HSV; Blank et al., 1951). Its use subsequently expanded to the diagnosis of other cutaneous diseases such as pemphigus vulgaris. Since then, the Tzanck smear has been used as a rapid technique for evaluating various erosive vesiculobullosal, tumoral, and granulomatous diseases. It can aid in the diagnosis of infectious diseases such as bullous impetigo and bullous diseases including pemphigoid and congenital epidermolysis bullosa. It has been used to evaluate malignancies like basal cell carcinoma (BCC) and benign growths such as seborrheic keratosis. Cutaneous leishmaniasis is a granulomatous disease that is frequently diagnosed by Tzanck smear (Eryilmaz et al., 2014a). It is particularly useful in areas that are challenging to biopsy such as the oral mucosa and periocular region. Furthermore, this diagnostic test has great utility in situations where a diagnosis cannot be determined through methods such as polymerase chain reaction (PCR) and histopathology (Oranje & Folkers, 1988).

**INDICATIONS**

The Tzanck smear is a useful diagnostic procedure. Tzanck smears may be used to diagnose other cutaneous infections and blistering diseases and to detect herpesvirus as well as other skin conditions (Gupta & Singh, 2005). It may be implemented in the acute setting to rapidly diagnose cutaneous herpetic infections. The Tzanck smear has been used for the diagnosis of pemphigus vulgaris, specifically in the early stages of the disease (Eryilmaz et al., 2014a). Importantly, this smear can help distinguish between Stevens-Johnson syndrome (SJS)/toxic epidermal necrolysis and staphylococcal scalded skin syndrome (SSSS) by the presence or absence of inflammatory cells, respectively (Table 1). The distinction between SJS/toxic epidermal necrolysis and SSSS must be made rapidly to initiate correct therapy for these disorders with high morbidity and mortality.

**COLLECTION INSTRUCTIONS**

1. After obtaining consent from the patient, select an intact blister that is preferably less than 3 days old to ensure cytomorphology is present.
2. Using a scalpel blade, gently deroof the lesion.
3. Scrape the base of the lesion from its advancing border in case of an erosion.
4. Smear the tissue onto a clean microscope slide.
5. Allow it to dry in the air.
6. Fix the specimen with preservative such as methanol.
7. Stain the sample with a Giemsa stain or other appropriate stain to prepare the slide for visualization under the microscope.

**CLINICAL STUDIES**

In a study comparing the diagnostic reliability of Tzanck smear, the results showed substantial reliability for erosive vesiculobullosal and granulomatous lesions (0.79 and 0.68, respectively) and moderate reliability for tumoral lesions. Thus, Tzanck smears for erosive vesiculobullosal or granulomatous lesions are reliable, but tumoral lesions may require additional testing (Eryilmaz et al., 2014a). A hospital-based cross-sectional study was conducted over a period of 20 months to assess the utility of Tzanck smears in supporting or excluding diagnosis of immunobullous lesions or herpetic infections (Panwar et al., 2017). This study recommends the use of Tzanck smears as a first line diagnostic tool for vesiculobullosal, erosive, and pustular lesions. The diagnostic accuracy of exfoliative cytology, a noninvasive test that uses Tzanck smears, in detecting BCC in adults was reviewed (Ferrante di Oranje & Folkers, 1988). Compiled data from seven studies estimating high sensitivity and high specificity of exfoliative cytology to be 97.5% and 90.1%, respectively. This suggests that exfoliative cytology can help corroborate BCC in patients with skin lesions suspecting BCC. In a study comparing diagnoses of 200 pigmented skin lesions by various dermatologists, the diagnostic reliability of Tzanck cytology and dermatoscopy were determined to be equal (Wang, 2012). With a diagnostic accuracy of 90.5%, equal to dermatoscopy, Tzanck smears could be a helpful tool for differentiating between melanocytic and melanocytic lesions at the bedside (Wang, 2012).

**REFERENCES**


**LIMITATIONS OF TZANCK SMAR**

- Administrative burden of laboratory certification
- Difficulty distinguishing diseases without specific cytologic findings
- Cost
- Difficulty in obtaining an adequate specimen
- Difficulty in obtaining an adequate specimen

**DISCLOSURES & CONFLICTS OF INTEREST**

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