

## Objective

The primary objective was to compare the quality and intensity of sensations evoked by cotton swab palpation of the vestibule among women with and without vestibulodynia.

## Methods

A total of 51 women underwent a structured sensory assessment of vulvar mucosa, including 31 vestibulodynia patients and 20 pain-free controls. Six vestibular sites (three in upper and lower vestibule each) were palpated in a predetermined order with a cotton swab. The upper vestibular sites were labeled as “10,” “12,” and “2,” and the lower vestibular sites were labeled as “5,” “6,” and “7” corresponding to the positions of the sites on a standard “clock face.” The participant’s perceived sensation (cotton swab or misperception as pinprick) and intensity of the evoked pain sensations was determined at each site. The pain intensity was evaluated using a 0-10 visual analog scale (VAS). The association between examination site and vestibulodynia case status and each outcome variable were evaluated using mixed effects models. Case status and examination site were treated as fixed effects with a random effect for each subject.

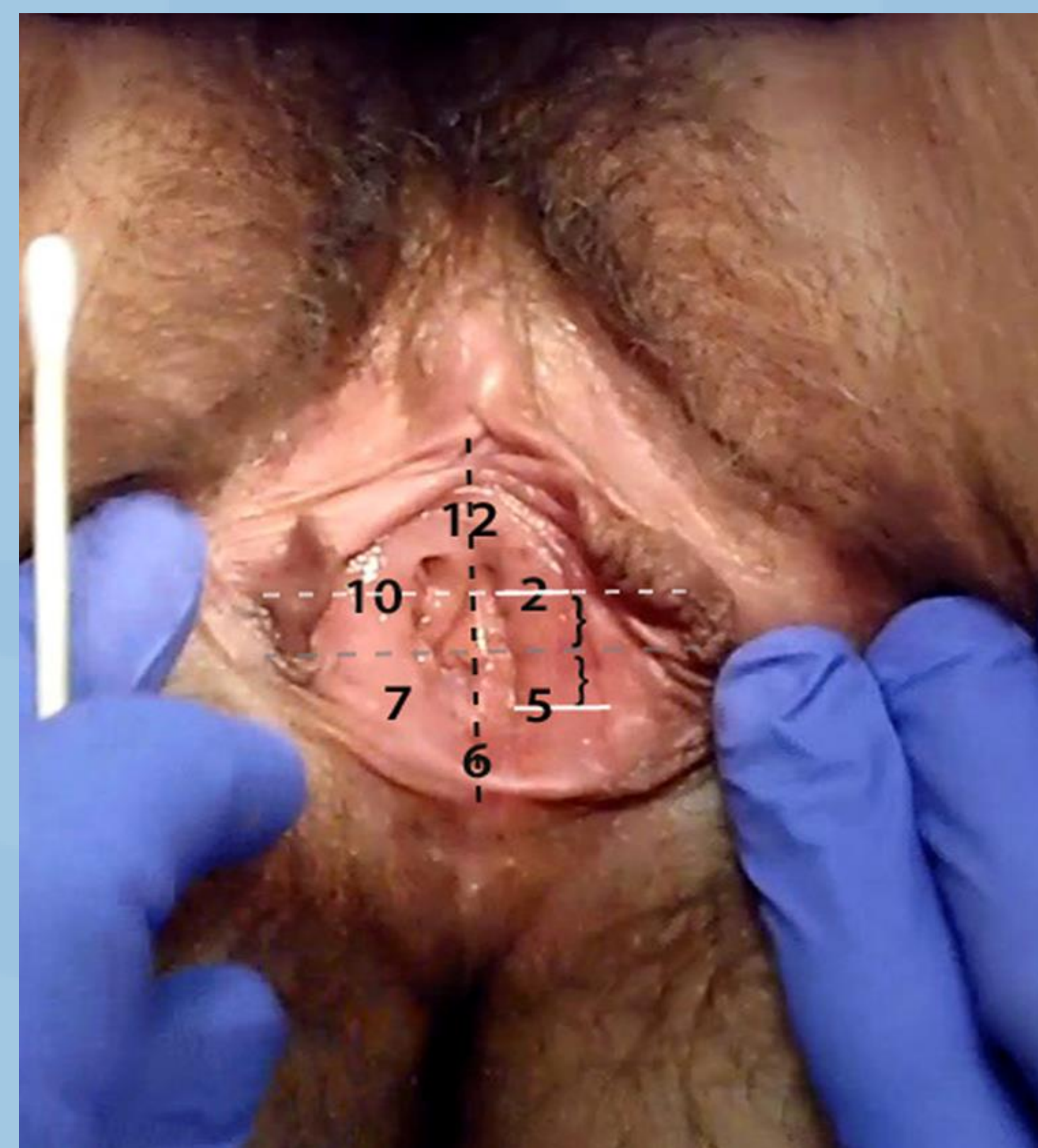


Figure 1. Location of pain sensitivity assessment of the vulvar vestibule

## Results

Across all examination sites, vestibulodynia patients were more likely to report a pinprick sensation than healthy controls (OR=3.0, 95% CI=1.3, 7.1). The average intensity of the evoked sensations was similarly greater in the vestibulodynia patients (mean VAS difference=1.5, 95% CI=0.9, 2.2). The average VAS rating was also greater when participants reported a pinprick sensation (mean VAS difference=1.5, 95% CI=1.2, 1.8). The odds of reporting a pinprick sensation were higher at sites 6 (OR=3.9, 95% CI=1.5, 9.8) and 12 (OR=6.4, 95% CI=2.5, 16.3) compared to the baseline group (site 2). The odds of a pinprick sensation at the remaining sites did not differ significantly from the baseline. Similarly, the mean VAS ratings were significantly higher at sites 6 (mean VAS difference=1.5, 95% CI=1.0, 2.0) and 12 (mean VAS difference=0.7, 95% CI=0.2, 1.2) compared to the baseline, with no other sites showing significant differences from the baseline. A significant interaction was observed between case status and site 6 (mean VAS difference=1.7, 95% CI=0.7, 2.7), indicating that site 6 is significantly more sensitive among vestibulodynia cases than controls. No other significant interactions were observed.

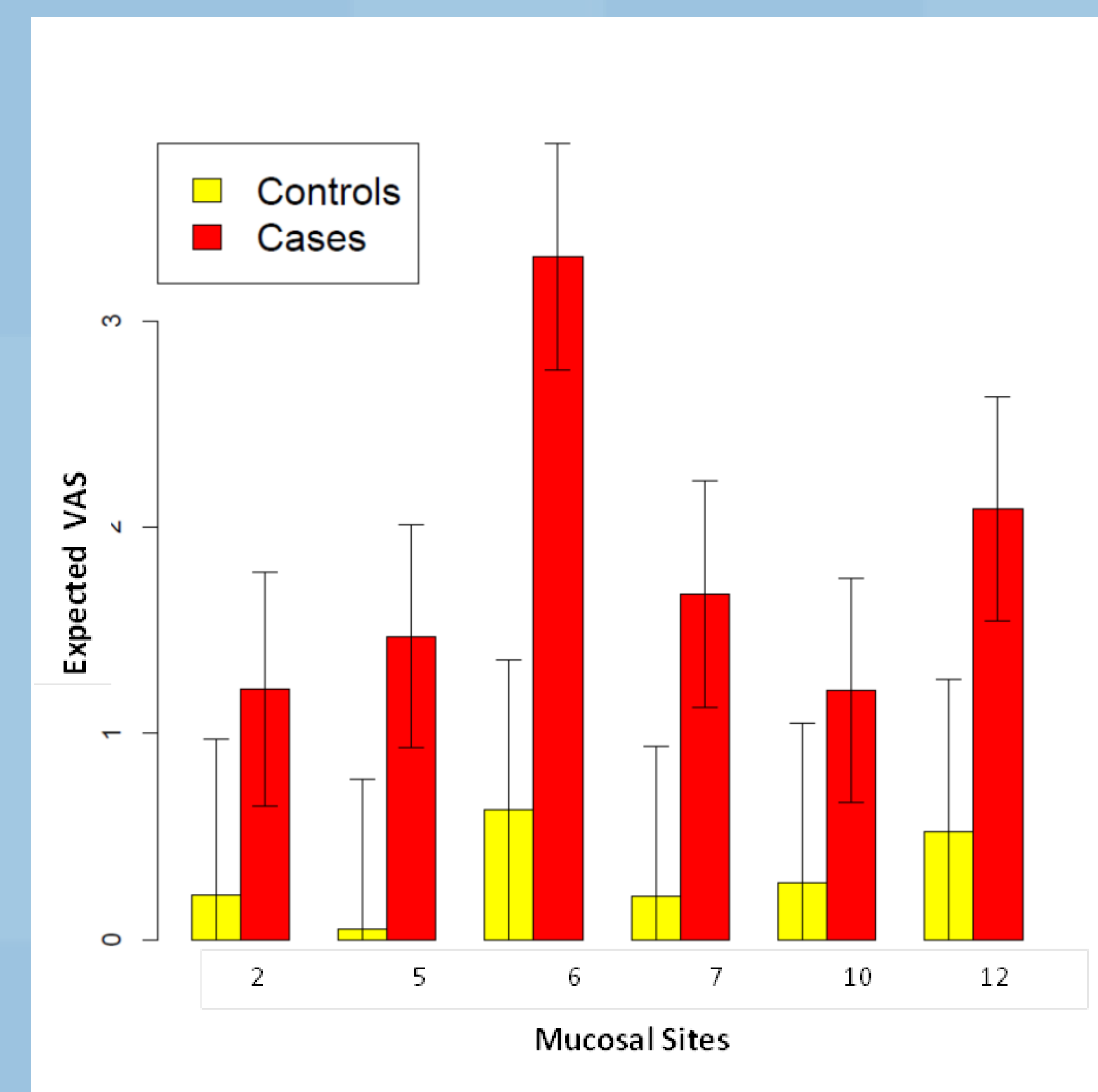


Figure 2. The graph shows that vestibulodynia patients are expected to report higher VAS ratings than healthy controls on all six sites. Overall, site 6 has the highest expected VAS rating for both groups.

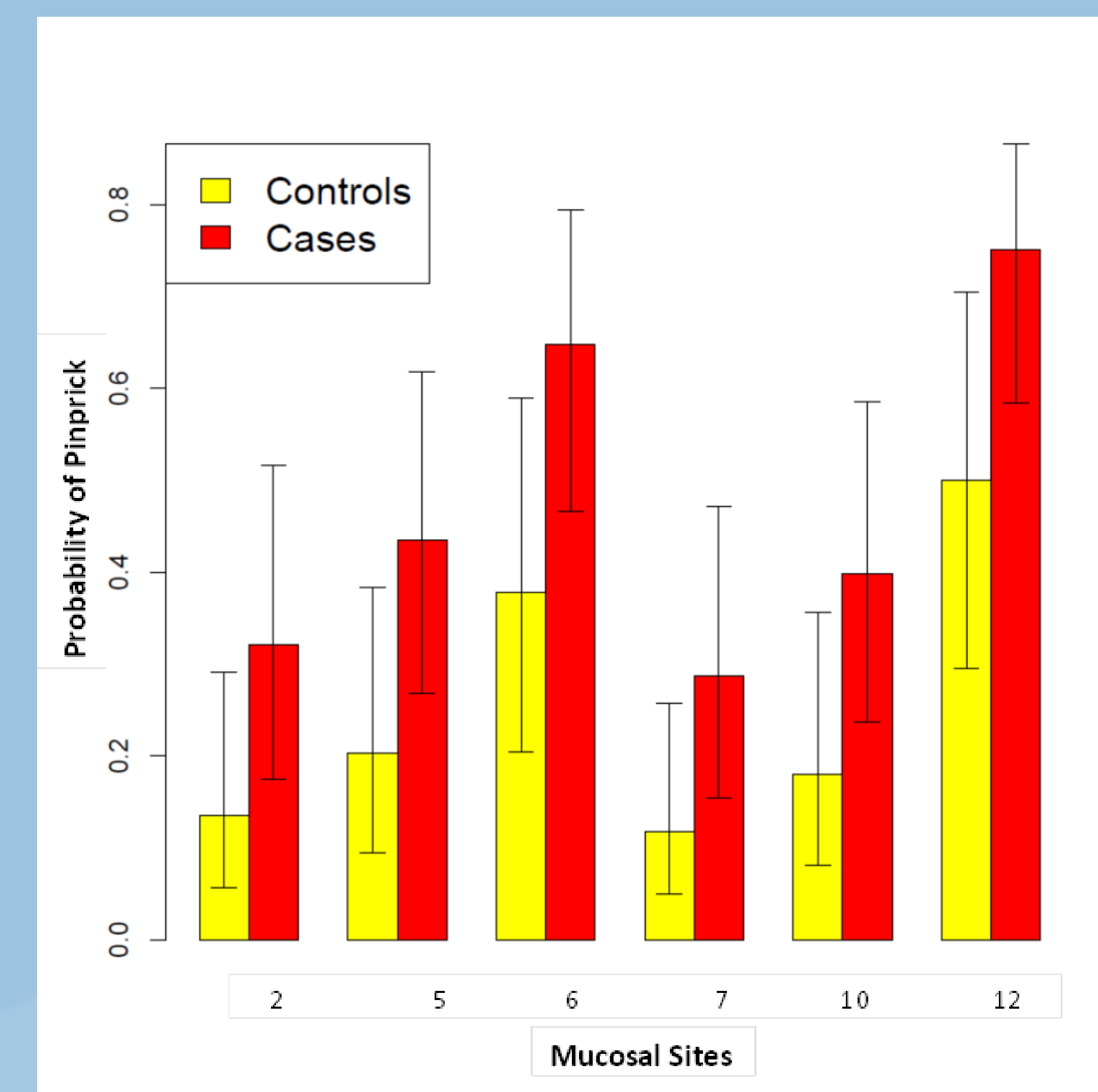


Figure 3. The graph shows that vestibulodynia patients are more likely to report pinprick sensation than healthy controls.

## Conclusions

Women with vestibulodynia are significantly more likely to report a pinprick rather than a cotton swab sensation. Vestibulodynia cases also reported significantly higher VAS ratings than controls. Sites 6 and 12 were the most sensitive sites for both cases and controls. The mean VAS ratings were higher at both sites, as were the odds of a pinprick sensation. The difference between the VAS ratings of cases and controls was significantly larger at site 6, suggesting that cases are more sensitive than controls at this site.

## Summary

The sensations evoked by cotton swab palpation of the vestibule vary depending on the examination site and vestibulodynia case status. Overall vestibulodynia patients show greater sensitivity than controls.