

**MEASUREMENTS OF PERIODONTAL
TEMPERATURE & ITS COMPARISON TO THE
CREVICULAR FLUID FLOW IN THE ASSESSMENT OF
PERIODONTAL DISEASE SEVERITY**

*A thesis
submitted to the council of the College of
Dentistry at the University of Baghdad, in
partial fulfillment of the requirements
for the degree of Master of Science in
Periodontics*

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2006 A.C

1427 A.H

Abstract

In periodontics, there is a need for objective measurements in monitoring disease processes & in assessing the effectiveness of treatment

Elevated temperature is one of 4 cardinal inflammatory signs & is a potential indicator of periodontal disease.

The purpose of this study was to determine & compare the severity of periodontal disease by subgingival temperature measurements in health & disease state, determine the correlation between periodontal parameters (bleeding on probing & probing depth) and subgingival temperature measurements & compare GCF flow with subgingival temperature.

10 male subjects ranging in age (25-55) years were measured at 4 sites per tooth for subgingival temperature, GCF flow, probing pocket depth & bleeding on probing.

GCF collected by means of endodontic paper points size 30.

Subgingival temperatures were measured using digital thermometer while sublingual temperature was measured by sublingual digital thermometer.

To compensate for subject-to-subject variations in core temperature, site temperatures were measured & expressed as a difference relative to sublingual temperature.

Following measurement of subgingival temperature, probing depth & bleeding on probing were recorded using periodontal probe.

The results indicated that subjects differed in their mean temperature difference. Similarly, temperature at a site in relation to its location in the

mouth, pocket depth, bleeding on probing, GCF flow & inflammatory status.

Analysis of the results revealed a significant ($p < 0.05$) difference between mean temperature difference of healthy & diseased sites, anterior & posterior, maxillary & mandibular teeth for both healthy & diseased sites.

A natural posterior to anterior temperature gradient was observed with the posterior sites being hotter than the anterior sites & mandibular sites hotter than maxillary sites. Tooth by tooth analysis showed that diseased teeth have higher temperature than anatomically equivalent healthy teeth.

Subgingival temperature also correlates significantly ($p < 0.05$) with certain clinical parameters like probing depth, bleeding on probing while GCF flow differed significantly from subgingival temperature.

In conclusion, subgingival temperature measurements can be used as a successful mean of diagnosis or monitoring periodontal condition, but additional studies are necessary to develop thermometry as a diagnostic aid in periodontal practice.