**Aim:** To compare genetic aberrations in the oral epithelium of lung cancer patients with those without cancer.

**Subjects and Methods:** Buccal smears were performed to collect oral epithelium from each of the participants (smoker cancer patients $n = 50$, smoker control subjects $n = 40$, and nonsmoker control subjects $n = 25$). Cytogenetic changes in the samples were detected by micronuclei assay, whereas p53 and murine double minute 2 (MDM2) polymorphisms were genotyped using polymerase chain reaction-restriction fragment length polymorphism.

**Results:** p53 codon 72 polymorphism was seen in 44% of cancer patients versus 12.5% in smokers and 12% in nonsmokers of the control group. Similarly, MDM2 single nucleotide polymorphism 309 polymorphism was seen in 34% of patients with lung cancer as opposed to 12.5% of smokers ($P = 0.038$) and 8% of nonsmokers ($P = 0.019$) of the control group.

**Conclusion:** A higher proportion of individuals with lung cancer demonstrate genetic damage to oral mucosa compared to those without cancer.