The genesis of histological changes accompanying the papillary appearance in the conjunctiva in soft contact lens wearers was little investigated.

Conjunctival impression cytology is a method used recently to obtain a superficial conjunctival biopsy instead of exfoliative cytology and excisional biopsy used previously .

The aim of this work is to study different changes of the conjunctiva in soft contact lens wearers including the papillary appearance and correlate these changes to the cytological changes of the conjunctiva .

368 eyes (as study cases) and 124 eyes (as control cases) were included in this study . The studiesd eyes were classified into 3 groups according to the duration of contact lens wear. Each group was further divided into 2 subgroups according to presence or absence of lens intolerance symptoms . Eyes of the study groups were also categorized into daily and extended use of contact lenses .

Slit-lamp Biomicroscopic examination of the upper tarsal conjunctival surface with and without fluorescein , was done for both study and control subjects . Conjunctival translucency, grade of conjunctival Hypereamia and presence or absence of upper tarsal conjunctival papillae (satin, uniform, nonuniform or giant papillae) were all listed.

Small strips of cellulose acetate filter paper with micropores of 0.45 micron were pressed against the upper palpebral and bulbar

(temporal and nasal) conjunctiva , then removed and preserved for laboratory staining using a apecial staining protocol including periodic acid schiff reagent and papanicolaou stain, then examined by light microscope for squamous metaplasia .

In symptomatology itching was the highest symptom of incidence in symptomatic subjects followed by mucus discharge and lastly was lens intolerance .

Loss of conjunctival translucency was recorded markedly in symptomatic subjects wearing extended contact lenses for a period more than one year . The period of contact lens use had a significant effect on conjunctival translucency, while the mode of their use had not the same effect .

Grade + 3 conjunctival Hypereamia (severe hypereamia) was not recorded in control subjects , slight in asymptomatic and marked in symptomatic cases. The difference in conjunctival hypereamia grades was insignificant between daily and extended wear lenses , while there was marked shiffting of conjunctival hypereamia from grade 0 to grade + 3 with increased the period of contact lens use .

The apearance of macro or giant conjunctival papillae was correlated to contact lenses use , as most eyes of the control group showed uniform papillae with papillary diameter <0.3 mm and satin appearance with no papillae, while giant papillae was not recorded in any eye of the control group . No satin conjunctival appearance was detected in the symptomatic cases which means that once the lens

wear become symptomatizing ,the conjunctiva shows uniform or more advanced papillary changed. On the other hand , giant papillary appearance was recorded in small percentage in asymptomatic cases, while it's highest incidence was in the symptomatic cases wearing extended lenses for a period of more than one year.

There was a marked significant shiffting of conjunctival apearance from satin to uniform to nonuniform to giant papillary appearance from asymptomatic to symptomatic subjects . Another similar shift although less significant was detected with increased the period of lenses use . This shift was lesser from daily wear to extended contact lens wear but still had a significant value .

In specimens of impression cytology obtained, there was a decrease in nuclear-cytoplasmic ratio of epithelial cells , meta chromatic changes of cytoplasmic colour, emergence of keratinization accompained by decrease in goblet cells and /or their impressions (squamous metaplasia).

In the control subjects , more than half of them had normal conjunctiva with cytological grade 0 , and only one eye (out of 124 eyes) had squamous metaplasia grade 3.

In study subjects , the highest incidence of squamous metaplasia grade 3 was detected in symptomatic subjects wearing extended lenses for a period of more than one year, on the other hand grade 0, was not detected in the symptomatic cases which means that, when symptoms of contact lens intolerance develop, the conjunctiva shows

pathological changes . The highest incidence of grade 0, was in asymptomatic subjects wearing daily used contact lenses for a period less than 6 months .

There was a significant shift of conjunctival cytological changes from grade 0 to grade 3 in symptomatic cases rather than asymptomatic , and with the increase of period of lens use , while this shift was slight in eyes with extended contact lenses to rather than eyes using the daily lenses .

There was a good correlation between the papillary appearance of conjunctiva and it's cytological changes . All the satin appearance had cytological grades 0 and 1 only. In uniform appearance there was marked shift of cytological changes from grade 0 to grade 3 . In nonuniform appearance grade 0was not detected . The more advanced stage of squamous metaplasia (grade 3) was detected in very high incidence in specimens from cases of giant papillae .

The pathological changes of conjunctiva were more advanced in contact lens wearers (study cases) than in control cases who had the same picture of papillary appearance .