RESULTS

Results

A : *CYTOPATHIC CHANGES AND VIRAL INCLUSION BODIES* :

Cytopathic changes and inclusion bodies usually ascribed to viruses were difficult to demonstrate in hematoxylin and eosin stained tonsil sections. Most of the cells with inclusion bodies were spotted out among cellular prints from the freshly cut surface of either tonsils or adenoids and or smear of released cells.

It was found that sections from 11 tonsils out of 30 (37%) and 13 adenoids out of 20 (65%) contained cells with viral-like inclusions (Table 1). Those positive tonsillar sections showed cells with intranuclear inclusion body (INIB) in 3 cases (2B%) or with intracytoplasmic inclusion body (ICIB) in 4 cases (36%) and multinucleated syncytium was observed in 4 cases (36%) compared to 4 (31%) INIB and 4 (31%) ICTB and multinucleated syncytium in 5 (3B%) observed in sections from adenoid specimens.Fig. (2 and 3).

B : *TONSILLAR AND ADENOID LYMPHOID FOLLICLES REACTIVITY:*

Examination of hematoxylin and eosin stained sections revealed reactive hyperplasia with active germinal centers ranging from 5-9 per low power field (mean 7/LPF) in 20 (67%) tonsils and 1B(90%) adnoidsFig.(4)and fibrosis with scattered reactive lymphoid follicles in 10(34%) tonsils and

2 (10%) adenoids (table,2).

All tonsils and adenoids sections with viral-like cytopathic changes(11 and 13 respectively)(Table 1)were observed to show marked reactive hyperplasia as well as eosinophilia, while no viral-like cytopathic changes could be detected in the rest of cases.

C: DETECTION OF VIRAL INFECTIVITY IN TONSILLAR CELLS BY SUCKLING MICE INOCULATION:

It was found that 9 out of 30 tonsils (30%) and 9 out of the 20 adenoids (45%) cellular suspension induced neurologic manifestations ending with fatalities in intracerebrally inoculated suckling mice (Table 3).

When viral isolation by suckling mice inoculation was correlated with the microscopic detection of viral-like cytopathology. In one adenoid suspension which was virulent to the suckling mice, the stained cut section of this adenoid showed intracytoplasmic basophilic inclusion.

D: RESULTS OF COMPLEMENT FIXATION TEST OF THE SUSPENSION OF INFECTED SUCKLING MICE BRAINS:

The test was negative with all available reference antisera excluding the identification of the viral agents

E : RESULTS OF PARAFFIN SECTION OF TONSILS AND ADENOIDS STAINED WITH FLUORESCIN LABELLED ANTIHUMAN IgE :

The paraffin sections were examined after stained with fluorescent labelled antihuman IgE, in sections 5 x 5 mm (table 4). In sections of tonsils,immunofluorescence cells could be detected in 20 cases (69%).Two cases (7%) contained 2 to 4 fluorescing cells,6 cases (20%) contained 5 to 10 fluorescing cells (in one of those cases, fluorescent subepithelial cells were demonstrated,) and 4 cases (13%) contained 10 to 20 cells and 8 cases (27%) contained more than 20 cells per section.

Examination of 20 adenoids sections revealed 15 cases (75%) with immunofluorescence cells.One case (5%) contained 2 to 4 cells, 3 cases (15%) contained 5 to 10 cells, 7 cases (35%) contained 10 to 20 cells (in one of those cases fluorescent subepithelial cells were demonstrated) and 4 cases (20%) contained more than 20 cells per section.

F : RESULTS OF TISSUE CULTURE INOCULATION:

The number of tonsillar suspensions that caused cytopathogenic changes upon inoculation into Vero cells cultures, after the third passage, were 11 cases (36%) out of 30 specimens(table 5). Three cases (15%) of adenoid cell suspensionsout of 20 specimenswere also positive.

G : RESULTS OF NEUTRALIZATION TEST WITH REFERENCE ENTERO-VIRUSES POOLED ANTISERA :

The viruses that were identified by this test were echoviruses 1,6,12,14,23,24 and 26. Virus identification occured in 7 specimens out of 11 tonsils and 2 specimens out of 3 adenoids.

Correlation of IgE fluorescence data with virus identification:

The number of specimens in which ECHO viruses were identified were 9 cases. Out of these 9 cases, 5 cases (56%) were demonstrated to give positive fluorescence when stained with fluorescine labelled antihuman IgE, while all cases negative for ECHO viruses were also negative for IgE.

Table (1) : Tonsils and adenoids cytopathic changes and viral inclusions bodies

Specimen	Total No. Studied	Viral-like inclusion bodies and cytopathic changes							
		INIB		ICIB		MC		TOTAL**	
		No.	%	No.	%	No.	%	No.	%
Tonsils	30	3	*28	4	36	4	36	11	37
Adenoids	20	4	31	4	31	5	38	13	65

INIB : Intranuclear inclusion bodies.
ICIB : Intracytoplasmic inclusion bodies.
MC : Multinucleated cyncytium.
* : Calculated in relation to positive cases.
** : Total number of specimens showing viral-like inclusion bodies.

Table (2): Tonsillar and adenoid lymphoid follicles reactivity

Specimen	Total No. studied	Lymphoid follicles reactivity			
		Reactive *		Fibrotic	
		No.	%	No.	%
Tonsils	30	20	67	10	33
Adenoids	20	18	90	2	10

* Active germ center per low power field.

Table (3): Virus isolation in suckling mice inoculation.

Specimen	Total No. studied	Virus isolation using suckling mice.	
		No.	%
Tonsils	30	9	30
Adenoids	20	9	45

Table (4): Paraffin sections of tonsils and adenoids stained with fluorescin labelled antihuman IgE .

Specimen	Total No. Studied	No. of fluorescing cells in sections 5x5 mm									
		(-)		(+)		(++)		(+++)		(++++)	
Tonsils	30	10	39	2	7	6*	20	4	13	8	27
Adenoids	20	5	25	1	5	3	15	7*	35	4	20

(-) No fluorescing cells
(+) 2-4 cells.
(2+) 5-10 cells
(3+) 10-20 cells.
(4+) > 20 cells

* Fluorescing cells were demonstrated subepithelialy in one specimen.

Table (5): Isolation of a Vero cell culture cytopathogenic agent from tonsils and adenoids.

Specimen	Total No. studied	Cytopathogenic agents	
		No.	%
Tonsils	30	11	36
Adenoids	20	3	15

Table (6): Neutralization test with standard enterovirus pooled antisera.

Origin of cytopathogenic agent.	Pool neutralization	Virus identity
Tonsil	Pool 1 and 9	ECHO 12
Tonsil	Pool 2 and 10	ECHO 23
Tonsil	Pool 5 and 10	ECHO 14
Tonsil	Pool 3 and 10	ECHO 26
Tonsil	Pool 3 and 10	ECHO 26
Tonsil	Pool 2 and 10	ECHO 23
Tonsil	Pool 8 and 3	ECHO 24
Adenoid	Pool 5 and 6	ECHO 6
Adenoid	Pool 1 and 6	ECHO 1