



Results

RESULTS

This study was carried on thirty (30) patients

They were classified into two (2) main groups :

Group I : - Included 22 patients had chronic rhinosinusitis .

Group II :- Included 8 patients had chronic rhinosinusitis with nasal polyposis .

The results of this study were statistically evaluated as follow .

This study was compromised of 30 patients , they were 18 males and 12 females their ages ranged from 18 - 40 years .

Age group ↓	Sex ⇒		Sex ⇒		Total	
	Male	Female	Male	Female	Total	Total
	No	%	No	%	No	%
< 20	6	33.3	5	41.6	11	36.7
20-	4	22.2	3	25.0	7	23.3
25-	5	27.8	2	16.7	7	23.3
35+	3	16.7	2	16.7	5	16.7
Total	18	100.0	12	100.0	30	100.0

Table (1): Distribution of the studied cases according age group and sex.

Subjective improvement :-

Preoperatively 14 patients of the 1st group (chronic sinusitis) reported nasal obstruction of varying degrees representing about 64% .

These patients felt satisfaction as a result of the operation, and nasal obstruction as complaint decreased to only 6 patients representing about 27% of total number of patients, and comparing to pre operative result, it was noticed that 14 patients were complaining of nasal obstruction reduced to only 6 patients post operatively, so 8 patients reported improvement representing about 57% of patients with nasal obstruction .

Rhinomanometric values were recorded pre and post operatively for all patients of group 1 of chronic rhinosinusitis without nasal polyposis and summarized in the following table

No.	Before the Operation		3 months after the operation	
	M.I.R	M.E.R	M.I.R	M.E.R
1	0.258	0.300	0.253	0.295
2	0.334	0.467	0.320	0.460
3	0.250	0.376	0.240	0.368
4	0.258	0.445	0.200	0.430
5	0.413	0.530	0.406	0.510
6	0.186	0.205	0.175	0.195
7	0.396	0.428	0.389	0.422
8	0.278	0.335	0.270	0.332
9	0.466	0.518	0.450	0.510
10	0.190	0.260	0.183	0.250
11	0.160	0.186	0.150	0.180
12	0.226	0.298	0.220	0.287
13	0.144	0.180	0.131	0.171
14	0.360	0.390	0.350	0.380
15	0.193	0.274	0.181	0.266
16	0.126	0.183	0.120	0.178
17	0.288	0.316	0.280	0.310
18	0.462	0.517	0.450	0.507
19	0.111	0.173	0.103	0.165
20	0.230	0.356	0.225	0.352
21	0.171	0.228	0.168	0.221
22	0.296	0.314	0.293	0.310

M.I.R. = Mean inspiratory resistance .

M.E.R. = Mean expiratory resistance .

Table (2): Values of M.I.R and M.E.R. before and after 3 months of the operation among the first group

Rhinomanometric values were recorded pre and post operatively for all patients of group 2 of chronic rhinosinusitis with nasal polyposis and summarized in the following table

No.	Before the Operation		3 months after the operation	
	M.I.R	M.E.R	M.I.R	M.E.R
1	0.833	0.984	0.270	0.300
2	0.498	0.520	0.190	0.230
3	0.546	0.690	0.260	0.280
4	0.369	0.413	0.258	0.296
5	0.438	0.579	0.291	0.344
6	0.631	0.771	0.289	0.296
7	0.565	0.680	0.240	0.288
8	0.370	0.486	0.211	0.256

M.I.R. = Mean inspiratory resistance .

M.E.R. = Mean expiratory resistance .

Table (3): Values of M.I.R. and M.E.R. before and after 3 months of the operation among the second group.

The mean and standard deviation of the difference of M.I.R. before and after 3 months of the operation among the first group was 0.0035 ± 0.023 . This difference is statistically insignificant ($p > 0.05$).

Parameter	Mean and standard deviation of the difference	Standard Error	Paired t	p
M.I.R.	0.0035 ± 0.023	0.0004	0.71	>0.05

Table (4): mean and standard deviations of the difference between M.I.R. before and after 3 months among the first group (n= 22)

The mean and standard deviation of the difference of M.E.R. before and after 3 months of the operation among the first group was 0.0062 ± 0.061 . This difference is statistically insignificant ($p > 0.05$).

Parameter	Mean and standard deviation of the difference	Standard Error	Paired t	p
M.E.R.	0.0062 ± 0.061	0.0013	0.48	>0.05

Table (5): mean and standard deviations of the difference between M.E.R. before and after 3 months among the first group (n= 22).

The rhinomanometric results of patients with chronic sinusitis (group I) showed improvement in nasal resistance as follow :-

Mean of MIR pre - operatively and 3 months post operatively was

$$0.0035 \pm 0.023$$

Mean of MER pre - operatively and 3 months post operatively was

$$0.0062 \pm 0.061.$$

Although there was marked difference between pre and post operative results, but this difference was statistically insignificant and it is contradictory with the subjective results.

The mean and standard deviation of the difference of M.I.R. before and after 3 months of the operation among the second group was 0.28 ± 0.145 . This difference is statistically highly significant ($p > 0.001$).

Parameter	Mean and standard deviation of the difference	Standard Error	Paired t	p
MIR	0.28 ± 0.145	0.051	5.46	<0.001

Table (6): mean and standard deviations of the difference between MIR before and after 3 months among the second group (n = 8)

The mean and standard deviation of the difference of M.E.R. before and after 3 months of the operation among the second group was 0.354 ± 0.176 . This difference is statistically highly significant ($p > 0.001$)

Parameter	Mean and standard deviation of the difference	Standard Error	Paired t	p
M.E.R.	0.354 ± 0.176	0.062	5.68	<0.001

Table (7): mean and standard deviations of the difference between M.E.R. before and after 3 months among the second group (n = 8)

The rhinomanometric results of patients with chronic sinusitis and nasal polyposis (group II) showed improvement in nasal resistance as follow :-

Mean of MIR pre - operatively and 3 months post operatively was

0.28 ± 0.145

Mean of MER pre - operatively and 3 months post operatively was

0.354 ± 0.176 .

There was marked difference between pre and post operative results, this difference was statistically significant .

Comparison of the means and standard deviations of the difference of M.I.R. before and after 3 months of the operation among the two groups of the study were statistically significant before the operation ($p < 0.001$), and statistically insignificant after the operation ($p > 0.05$).

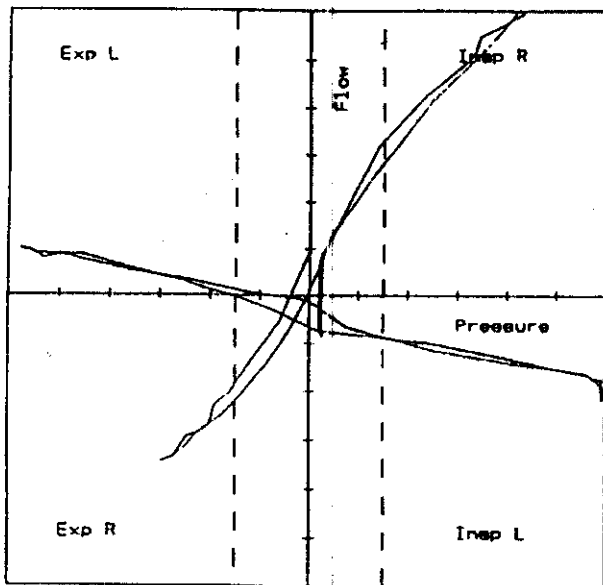
Parameter	st group 1 (n=22) X±SD	st group 2 (n=8) X±SD	t test	p
1-M.I.R.				
- Before operation	0.261 ± 0.11	0.531±0.15	-4.6	<0.001
- After operation	0.253 ± 0.1	0.251±0.036	0.08	>0.05

Table (8): means and standard deviations of the difference between M.I.R. before and after operation among the studied groups.

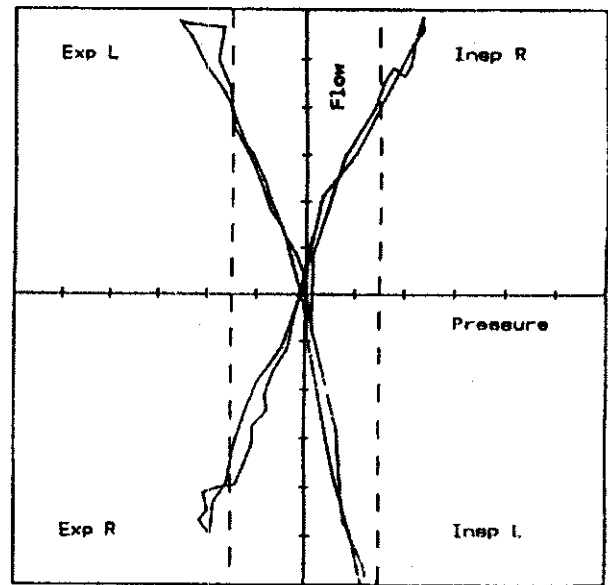
The means and standard deviations of the difference of M.E.R. before and after 3 months of the operation among the two groups of the study were statistically highly significant before the operation ($p < 0.001$), and statistically insignificant after the operation ($p > 0.05$).

Parameter	st group 1 (n=22) X±SD	st group 2 (n=8) X±SD	t test	p
1-M.E.R.				
- Before operation	0.331 ± 0.116	0.64±0.182	-4.48	<0.001
- After operation	0.303 ± 0.119	0.286±0.034	0.61	>0.05

Table (9): means and standard deviations of the difference between M.E.R. before and after operation among the studied groups.



A



B

Rhinomanometry curve

A : Pre-operative :-

For a nasal airway that is more obstructed closer to the pressure axis .

B: Post-operative :-

For a less obstructed nasal airway away from the pressure axis .

Chart (1): Distribution of the studied cases according to age groups and sex.

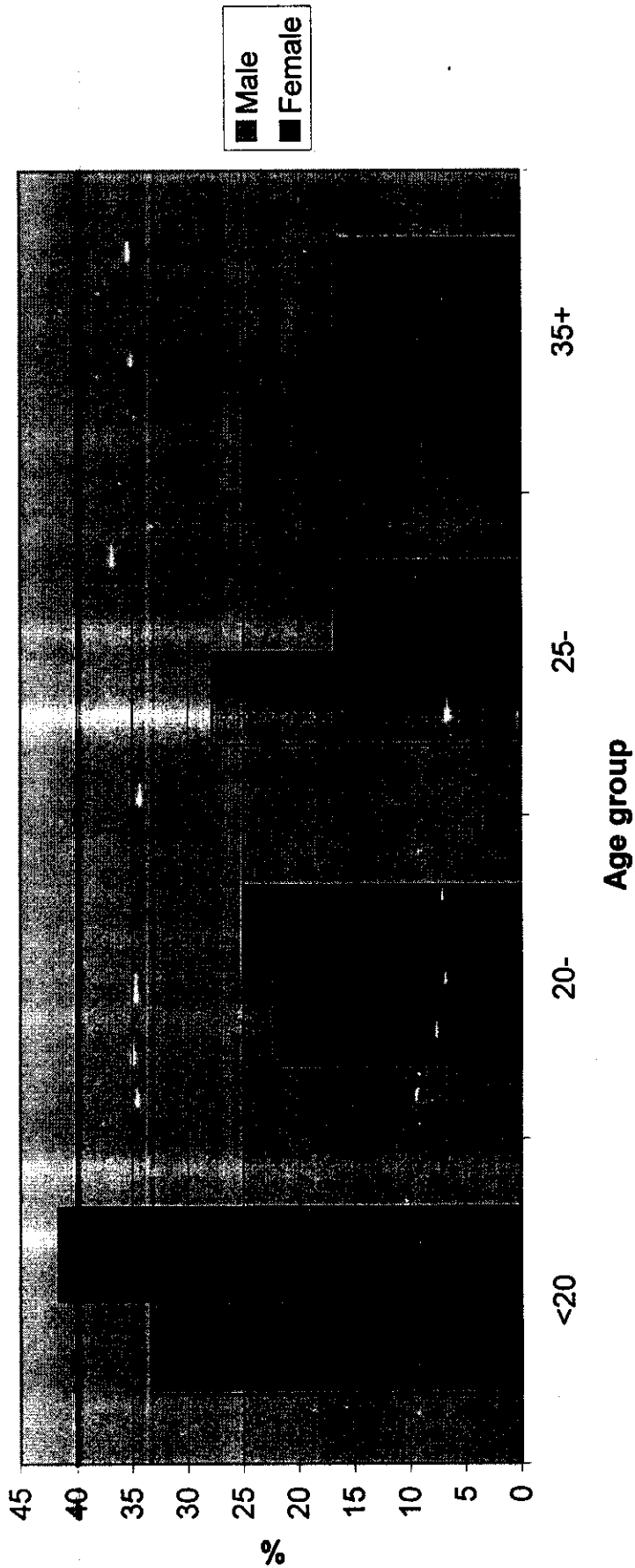


Chart (2): Means of M.I.R. and M.E.R. among the studied groups preoperative and 3 months post-operative

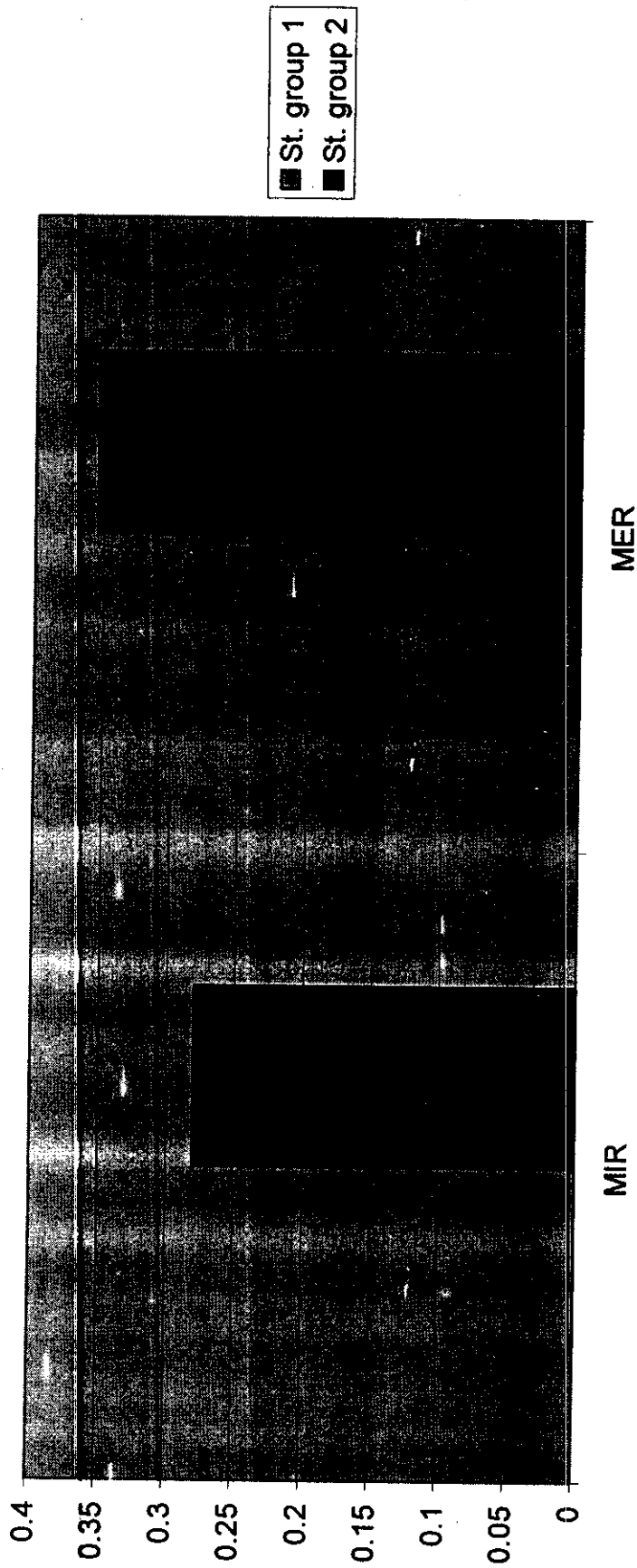


Chart (3): Means of M.I.R. among the studied groups pre-operative and 3 months post-operative

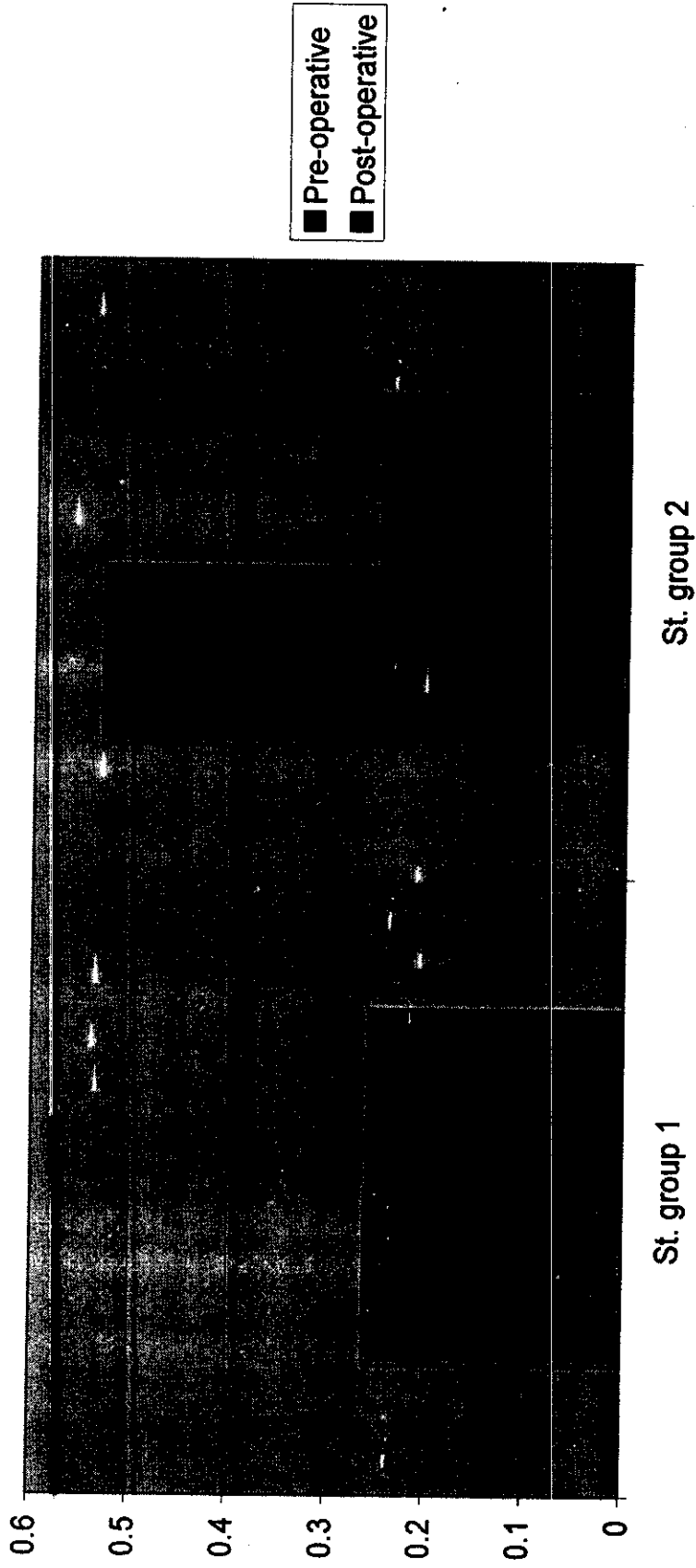
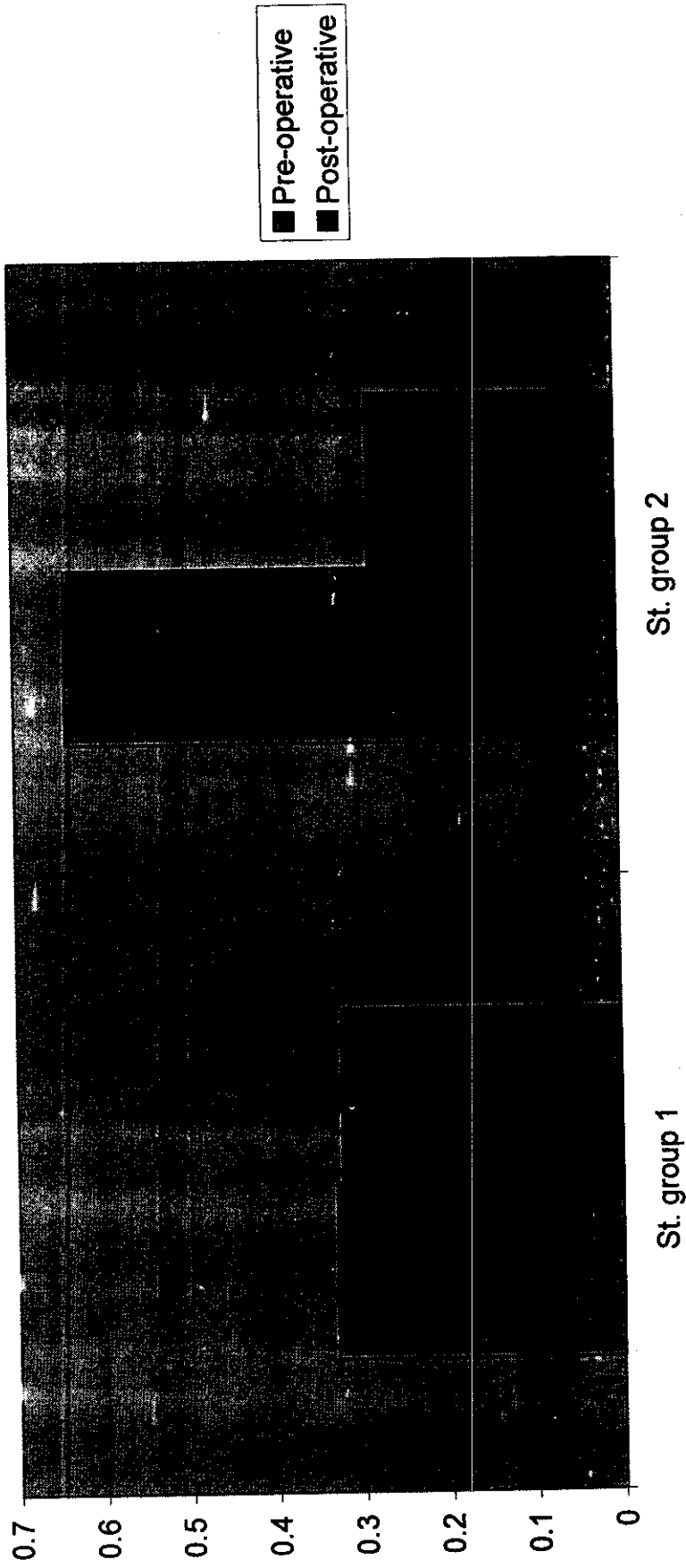
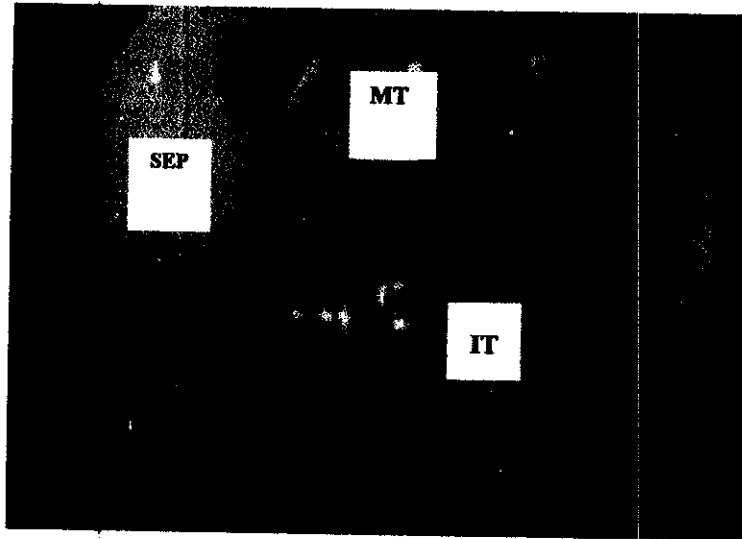


Chart (4): means of M.E.R. pre-operative and 3 months post-operative





(A)

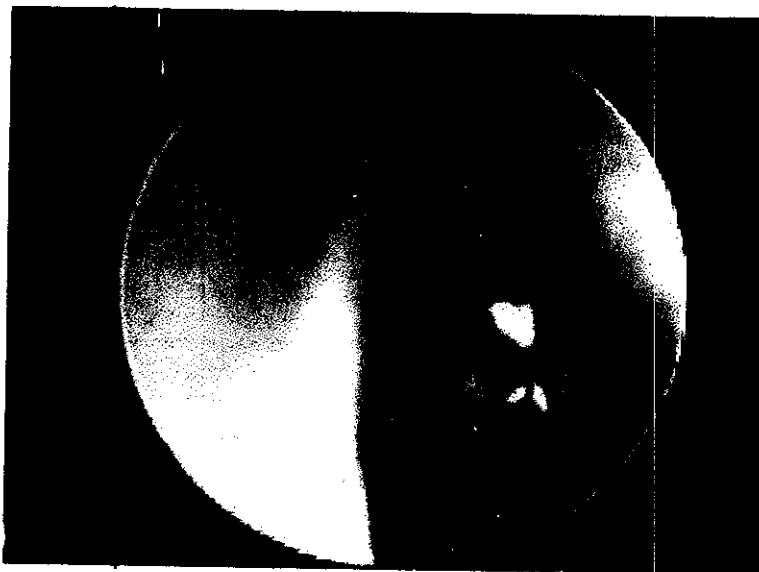
Pre-operative picture of a case of chronic rhinosinusitis with nasal polyposis.

N.B.

MT (middle turbinate)

IT (inferior turbinate)

SEP (septum)



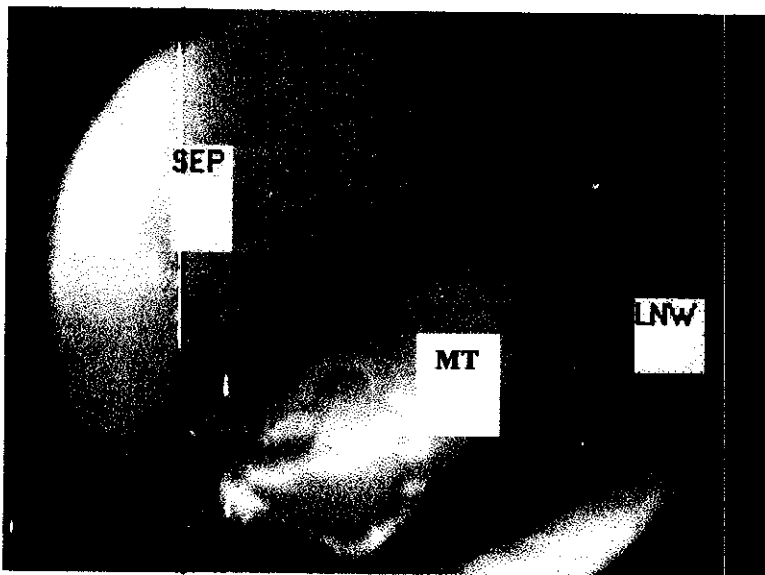
(B)

Post-operative picture after FESS.



(A)

Pre-operative picture of a case of chronic rhinosinusitis with a polyp between middle turbinate and lateral nasal wall.



(B)

Post-operative picture after the operation.

N.B.

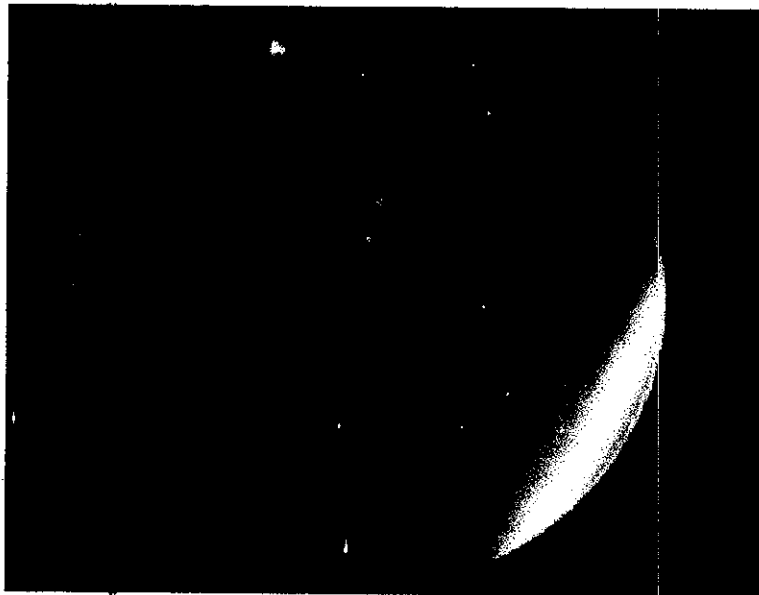
MT (middle turbinate)

SEP (septum)

LNW (lateral nasal wall)



(A)
A picture of chronic rhinosinusitis during removal of
the polyp.



(B)
Post-operative picture after FESS.