Study site:

The present research study which embarasses several fields of ophthalmology with or without nasal ailment was undertaken at the out patient department and wards of Ophthalmics, M.L.B. Medical College, Jhansi, which is surrounded by the extension of Vindhyachal Mountain. As a matter of fact this ecozone is mixed in its climatic conditions and the general standard of the population living in. Thereby provided an unique opporunity to undertake the present research problem, which was not been attempted in past by any one what so ever. The study site consist all relevant technical equipments, availability of patient and necessary library material in view of the running Medical College.

Clinical Material:

The clinical material for bacteriological study and its relation with nasal pathology of disease dacryocystitis has been selected from the patients attending the eye out patient department and those admitted in the eye wards of M.L.B. Medical College Hospital, Jhansi between Oct.,1988 to June,1989.
There were either diagnosed as cases of chronic dacryocystitis primarily or were cases of cataract, glaucoma, iriodocyclitis, corneal ulcer etc. and were found to having chronic dacryocystitis also on routine ocular examination and syringing.

Sample size:

In the present research study 50 subjects 62 eyes were choosen on the basis of chronic dacryocystitis diagnosed in the Ophthalmic O.P.D., M.L.B. Medical College, Jhansi. Thus, the significance of the selected sample becomes very much imperative and of great importance to the medical field as the analysis reveals most alarming facts selected with the said proposition i.e. 'Chronic dacryocystitis'. This would be worthwhile to mention have that rational standard of the data so collected in the present study is of utmost importance from the proper treatment and statistics point of view.

Criteria of patient selection:

The patients selected for the study had some complaints, pertaining to chronic dacryocystitis like -

(1). Excessive watering from one or both eyes of various duration.
SHOWING A 36 YEARS OLD LADY, SUFFERING FROM CHR. DACRYOCYSTITIS WITH LAC. FISTULA (LEFT EYE)
(2). Watering was accompanied with discharges -
   - Serous
   - Mucoid
   - Mucopurulent
   - Purulent

(3). Regurgitation of discharge on pressing over the sac area with thumb.

(4). Non inflammatory swelling present over the sac area for a long duration.

(5). Any opening or fistula present in the sac area for a long duration, accompanied with watering or discharge from the opening.

(6). Patient used to evacuate the discharge by pressing the sac with thumb.

Methods:

(1). History:

In the outdoor patient department as the patients complained of excessive watering associated with other complaints or alone, they were asked some relevant questions as follows:

- Duration of excessive watering
- Any associated discharge
- Any past history of a swelling over the sac area.

- Any association with redness of the eyes.

- If redness of the eye; then it was a constant feature of frequent attacks of redness.

- Any association of nasal complaints like common cold, sneezing, pain in nose during blowing.

- Any association of nasal discharge.

- The redness of the eye is followed by watering or vice versa.

- Any history of chronic infections like tuberculosis, leprosy, syphilis etc.

(2). Past and Family history:

The detailed enquiry was made about any previous complaints related to the disease like recurrent swelling and redness over the sac area with watering from the same sided eye. Also asked the patient about the same type of complaints for their family members and which type of treatment they had.
(3). **Socio-economic status:**

Whether patients belong to poor, middle (average) or high socio-economic status. The patients, whose income per capita was less than Rs. 140/- per month were of poor status, Rs. 140 - 599/- per month were of average and more than Rs. 600/- per month were of high socio-economic status, as described by Srivastava (1982). The hygienic condition of surroundings also had been asked. Personal hygienic condition of the patient and cleanliness is also observed.

(4). **Local examination:**

After the detailed history, the local examination was done, as follows:

(a). **External ocular examination:**

The complete external ocular examination is done to exclude any abnormality of lid, conjunctival sac, conjunctiva proper, cornea or any swelling around the eye specially near the medial canthus.
(b) **Regurgitation test:**

To test the regurgitation in the left eye, the head of the patient is fixed with the right hand and the thumb of the left hand is kept on the sac area of left eye, keeping the lower lid slightly everted to sac the lower puncta clearly. Now pressure is applied by the left thumb to press the sac area and to observe any regurgitation of fluid from the lower punctum. It was also noted whether the discharge is watery, mucoid, mucopurulent or purulent. The right eye is also examined similarly.

(c) **Fluorescein dye test:**

The patient is asked to lie down on the examination table and two drops of 2% fresh fluorescein are instilled in the conjunctival sac of the eye which is to be examined. Insert a sterilised cotton swab dipped in 2% xylocain at the level of inferior meatus of nose on the same side, which is just under inferior turbinate
bone about six mm behind its anterior attached border. Now the patient is asked to blow the nose, if the cotton swab is stained, the lacrimal passage is patent and if not, there is an obstruction on that side. In some cases like - dilated atonic sac or partial stricture the coloured fluid did reach the interior meatus of the nose. The same technique is applied to test the other side.

(d). Schirmer's test:

Equipment:
- Xylocain 4%
- Filter paper strip 35 mm x 5 mm

Ask the patient to lie down on the examination table and 4% xylocain drops put in the eye to be tested. Wait for one minute and wipe off the extra amount of xylocain from the conjunctival sac with a wet cotton swab, the light should be subdued.

The filter paper strip is folded at 5 mm distance from one end and this end is kept in lower formix, rest of the filter paper strip is allowed
to hang over the lower lid. After waiting for 5 minutes, the extent of wetting of filter paper is observed. 15m.m. wetting of paper is considered to be normal and above it is considered a case of epiphora.

(e). Syringing of lacrimal sac equipments:
- Xylocain 4%
- Sterilised syringe 2/5 ml.
- Punctum dilator
- Normal saline
- Lacrimal cannula
- Normal saline or sterile penicillin solution.
- Antibiotic eye drops or ointment.

The patient is asked to lie down on the examination table and 4% xylocain drops is instilled in the eye to be tested. Asked the patient to close the eye for two minutes, now the lower lid is everted with the left hand, the Nettleship's punctum dilator is held in the right hand and inserted gently but firmly into the lower punctum with slightly rolling it like a screw, it inserted first directly downwards by 1 - 2 m.m. then horizontally and medially towards the lacrimal
sac. The dilator is then rotated 3 - 4 times so as to dilate the punctum. Now the 2 cc / 5 cc syringe is filled with normal saline or pencilline solution, a lacrimal cannula is attached to it. This is inserted in to the dilated punctum in the same direction and the fluid is pushed in the lacrimal sac. It is noted if the fluid is going normally or gentle pressure is required, or if regurgitation of fluid is present, it is to be observed carefully whether the regurgitating is through upper or lower puncta and also the colour and consistency of fluid.

If the fluid reached normally down the nasolacrimal duct to the nose and finally to the nasopharynx, the patient feels bitter or salty taste in his / her mouth, meaning thereby that the sac is patent, absence of bitter or salty taste in the mouth means an obstruction and the regurgitation of fluid is present through the same or opposite puncta.

After the test antibiotic eye drops or ointment is put in the eye.
GROWTH OF STAPHYLOCCUS ON BLOOD AGAR PLATE, SHOWING BETA HAEMOLYSIS AROUND THE COLONIES
GROWTH OF STAPHYLOCOCCUS ON BLOOD AGAR PLATE, SHOWING BETA HAEMOLYSIS AROUND THE COLONIES
Conclusion:

- If regurgitation through same punctum the obstruction is in the lower canaliculus.

- If regurgitation through (opposite) upper punctum - the obstruction is in the nasolacrimal duct or lower end of the sac.

- If considerable pressure is required for syringing may be a stricture in the sac area.

- If the fluid reached the mouth normally - no obstruction.

- If syringing is not possible through the lower punctum due to stricture or congenitally absent the syringing is done from the upper punctum, and during the process the conjunctival sac is kept dry so that the slightest regurgitation of the fluid is marked out easily.

(f). Examination of nose and paranasal sinuses:

It is performed with the help of E.N.T. Surgeon in Out Patient Department of E.N.T., as follows -
GROWTH OF STREPTOCOCCUS ON BLOOD AGAR PLATE, SHOWING ALPHA HAEMOLYSIS AROUND THE COLONIES
Cases in this study were subjected to clinopath - radiological examination for nasal and paranasal sinus disease.

Facial examination was done to rule out any facial asymmetry due to chronic nasal obstructive pathology like - adenoids and severe septal deviation.

Anterior rhinoscopy was done to examine the acute and chronic nasal and paranasal infections and obstructive pathology.

Posterior rhinoscopy was done to rule out any infective and obstructive disease of nasopharynx, post nasal cavity and posterior group of sinuses.

Collection of specimens for culture:

From conjunctival sac - The patient was asked to lie down on examination table. Under dim illumination the lower lid was everted and a sterile cotton swab was rolled over the conjunctival sac to collect the discharge. The swab was placed in a sterile tube and the tube was labelled properly.
MIXED GROWTH ON BLOOD AGAR PLATE
ONE TYPE IS HAEMOLYTIC, AND ANOTHER
IS NON HAEMOLYTIC
From lacrimal sac — With the patient lying down, the area of the lacrimal sac was pressed with left hand. As soon as the discharge came out through puncta, it was collected on a sterile cotton swab, which was replaced in the tube and the tube was properly labelled.

Nasal discharge — A sterile swab was introduced into the nasal cavity upto the inferior turbinate. The swab was rotated and then withdrawn. It was placed in the sterile tube and labelled properly.

In bilateral cases the same procedure was adopted on other side also.

All the specimens were sent to microbiology laboratory as early as possible after collection.

Culture — All the swabs were inoculated on to blood agar and Mac Condey's agar. The plates were incubated at 37\(^{o}\)C overnight and were examined next day. Smears were prepared from all the colon types the growth was identified following standard methods, (Cruickshank et al (1975)).