

Indications of Penetrating Keratoplasty at Madina Teaching Hospital Faisalabad over a Period of 12 Years (1998 – 2010)

Aamir Ali Chaudhry,¹ Muhammad Zahid Siddiq,² Nasir Chaudhry,³ Aurangzeb Khan,⁴

Abstract

Purpose of Study: To analyze the various indications for penetrating keratoplasty at Madina Teaching Hospital Faisalabad over a period of 12 years from 1998 – 2010.

Materials and Methods: This study was done in ophthalmology department of Madina Teaching Hospital Faisalabad. The hospital record of 672 patients operated for penetrating keratoplasty was reviewed retrospectively.

Results: Out of 672 patients operated for penetrating keratoplasty 468 (69.64%) patients were males and 204 (30.36%) patients were females. Age of the patients ranged between 5 years and 65 years. Two hundred nine (31.1%) were between 5 years – 20 years, 261 (38.83%) were between 21 years – 35 years, 151 (22.47%) were between 36 years – 50 years and 51 (7.58%) were between 51 years – 65 years. The main

indications were corneal scars 339 (50.44%), keratoconus 117 (17.41%), failed / rejected grafts 84 (12.50%), infectious keratitis 50 (7.44%), corneal dystrophies 36 (5.63%), bullous keratopathy 42 (6.25%) and corneal degenerations 04 (0.60%).

Conclusion: In conclusion the main indications of penetrating keratoplasty in Madina Teaching Hospital Faisalabad were corneal scars, keratoconus and failed corneal grafts. Corneal scars were the most common and this is comparable with other studies in the region.

Introduction

Corneal diseases are one of the leading causes of blindness in the world. Many of these diseases are curable. Penetrating keratoplasty is an effective treatment for many corneal diseases with poor vision. Penetrating keratoplasty is a surgical procedure in which full thickness host corneal tissue is replaced by donor corneal tissue.¹ Corneal transplant today ranks as one of the most successful organ transplant.² Advances in the field of microsurgery, ocular immunity and eye banking have made penetrating keratoplasty one of the most common transplant procedures in the world.³ The purpose of this study was to analyze the various indications for penetrating keratoplasty at Madina Teaching Hospital Faisalabad from 1998 – 2010.

Materials and Methods

This study was done in ophthalmology department of Madina Teaching Hospital Faisalabad. The hospital record of 672 patients operated for penetrating keratoplasty was reviewed retrospectively from Jan 1998 –

Chaudhry A.A.¹
Associate Professor Ophthalmology, Madina Teaching Hospital, University Medical and Dental College, Faisalabad

Siddiq M.Z.²
Assistant Professor Ophthalmology, Madina Teaching Hospital, University Medical and Dental College, Faisalabad

Chaudhry N.⁴
Assistant Professor Ophthalmology, Mayo Hospital, Lahore

Khan A.³
Assistant Professor Ophthalmology, Madina Teaching Hospital, University Medical and Dental College, Faisalabad

Dec 2010. At Madina teaching hospital corneal transplants are being performed on regular basis.

Corneal donor supply is from Sirilanka. The data was analyzed on the basis of indications for penetrating keratoplasty, age and gender distribution.

Results

Out of 672 patients operated for penetrating keratoplasty 468 (69.64%) patients were males and 204 (30.36%) patients were females. Age of the patients ranged between 5 years and 65 years. 209 (31.1%) were between 5 years – 20 years, 261 (38.83%) were between 21 years – 35 years, 151 (22.47%) were between 36 years – 50 years and 51 (7.58%) were between 51 years – 65 years. The main indications for penetrating keratoplasty were corneal scars 339 (50.44%), keratoconus 117 (17.41%), failed / rejected

Table 1: Gender distribution (n = 672).

Gender	No of Patients	Percentage
Male	468	69.64%
Female	204	30.36%

Table 2: Age distribution (n = 672).

Age	No of Patients	Percentage
5 y – 20 y	209	31.1%
21 y – 35 y	261	38.83%
36 y – 50 y	151	22.47%
51 y – 65 y	51	7.58%

Table 3: Main indications of penetrating keratoplasty (n = 672).

Indications	No of Patients	Percentage
Corneal scars	339	50.44%
Keratoconus	117	17.41%
Failed / rejected grafts	84	12.50%
Infectious keratitis	50	7.44%
Bullous keratopathy	42	6.25%
Corneal dystrophies	36	5.63%
Corneal degenerations	04	0.60%

grafts 84 (12.50%), infectious keratitis 50 (7.44%), bullous keratopathy 42 (6.25%), corneal dystrophies 36 (5.63%) and corneal degenerations 04 (0.60%). Corneal scar was the most common indication in our patients. The different causes of corneal scars in our patients who were operated for penetrating keratoplasty. The various causes of corneal scars in our patient were infective keratitis 56%, trauma 28.9%, trachoma 8.5%, chemical burns 5.30% and non specific 1.17%.

Table 4: Etiologies of scarring (n = 339).

Etiology	No of Patients	Percentage
Infectious keratitis	190	56.0%
Trauma	98	28.9%
Trachoma	29	8.55%
Chemical burns	18	5.30%
Non specific	4	1.17%

Table 5: Types of corneal dystrophies (n = 36).

Dystrophies	No of Patients	Percentage
Congenital hereditary endothelial dystrophy	14	38.88%
Macular dystrophy	11	30.55%
Granular dystrophy	6	16.66%
Fuchs dystrophy	4	11.11%
Non specific	1	2.77%

Discussion

In our study out of 672 patients 468 (69.64%) patients were males and 204 (30.36%) patients were females. There were more males than females and this trend is seen in most of the hospitals in the developing world due to various socioeconomic factors and comparatively easy accessibility of the males to health care facilities. The males are also more prone to develop trauma and corneal ulcers as compare to the females.

69.9% of our patients were under the age of 35 years. This was mainly due to the priority given to the young patients in our hospital.

The main indications of penetrating keratoplasty in our set up were, corneal scars 339 (50.44%), keratoconus 117 (17.41%), failed / rejected grafts 84

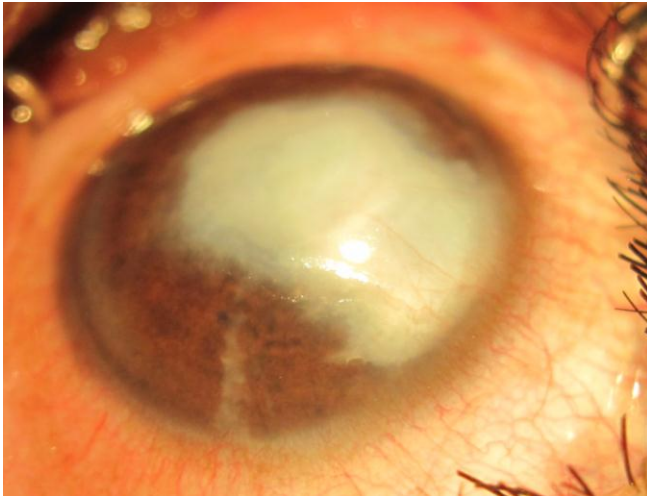


Fig. 1: *Corneal scar.*

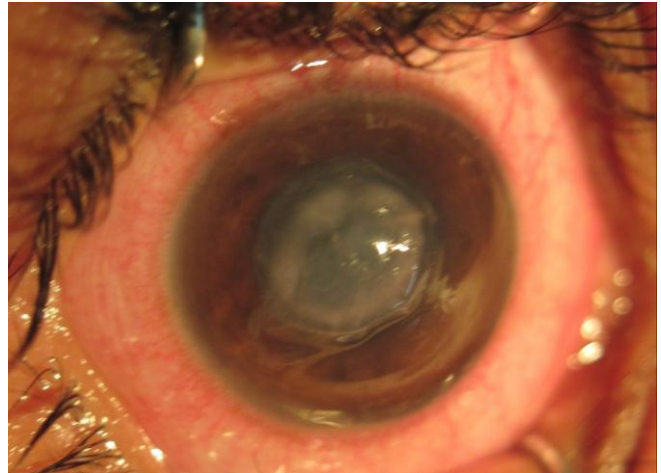


Fig. 4: *Infectious keratitis.*

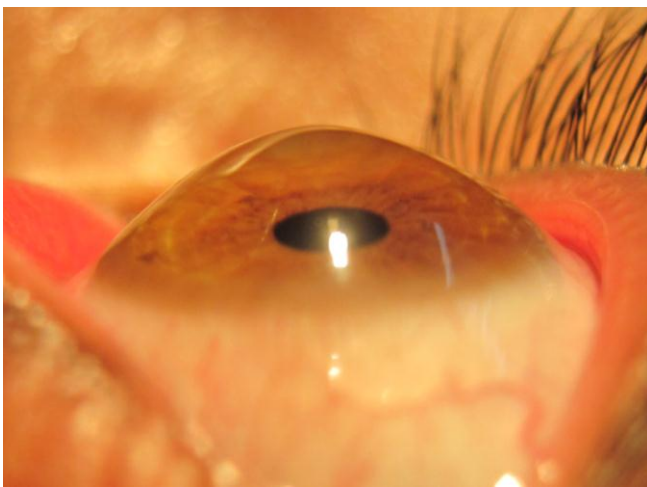


Fig. 2: *Keratoconus.*

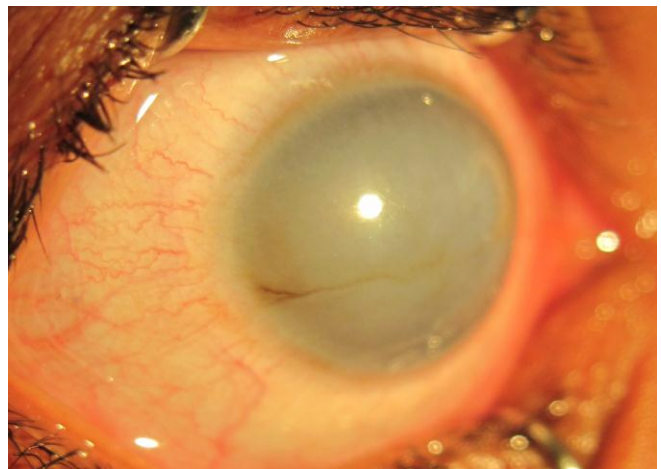


Fig. 5: *Congenital hereditary endothelial dystrophy.*

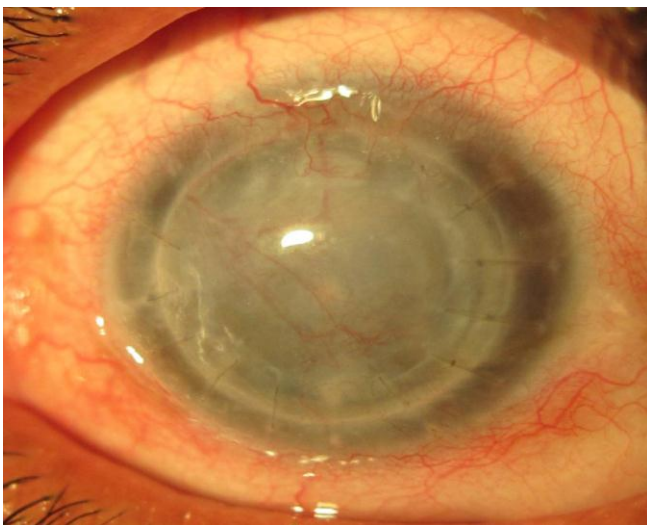


Fig. .3: *Rejected corneal graft.*

(12.50%), infectious keratitis 50 (7.44%), corneal dystrophies 36 (5.63%), bullous keratopathy 42 (6.25%), corneal degenerations 04 (0.60%). In our study, the commonest indication of penetrating keratoplasty was corneal scar. When we compare this with studies done in other countries, we have found out that this is in line with studies done in countries like Saudi Arabia and Nepal.^{4,5} But in studies done in Australia, U.K, U.S.A, Israel and Canada the most common indication was keratoconus.⁶⁻¹⁰

In a study carried out in Iran, the most common indication for penetrating was keratoconus (34.51%), followed by corneal opacity and scar (18.68%), pseudophakic bullous keratopathy (15.19%), corneal dystrophies (6.47%), and regrant (5.28%).¹¹

In a study done at District Railway Hospital in Katowice the leading indications of keratoplasty were

keratoconus and corneal edema.¹²

In a study done in north china the most common indication for penetrating keratoplasty was infectious keratitis (31%). Corneal scar was an indication in only 16% of the patients.¹³

In another study performed in India at All India Institute of Medical Sciences, New Delhi, the leading indications for penetrating keratoplasty were corneal scarring (38.03%) followed by acute infectious keratitis (28.38%), regrafting (11.5%).¹⁴

We further analyzed the different causes of corneal scars in our patients who were operated for penetrating keratoplasty. The various causes of corneal scars in our patient were infective keratitis 56%, trauma 28.9%, trachoma 8.5%, chemical burns 5.30% and non specific 1.17%.

Conclusion

In conclusion the main indications of penetrating keratoplasty in madina teaching hospital Faisalabad were corneal scars, keratoconus and failed corneal grafts, corneal scars being the most common and this is comparable with other studies in the region. The most common causes of corneal scars in our study were infectious keratitis and trauma. Emphasis should be given on precautions to avoid ocular trauma and early and effective management of infectious keratitis.

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