

## Special Topic

# Guest Editorial by Patron History of Plastic Surgery in Pakistan

**Professor Faiz Muhammad Khan**

*Department of Plastic Surgery, Jinnah Postgraduate Medical Centre, Karachi*

**SUMMARY.** One of the more challenging problems in head and neck surgery is mandibular reconstruction. A variety of tissues and techniques have been used over the years in an effort to find a solution. Currently the majority of reputable centers around the world favour the free microvascular transfer of bone. The vascularised fibula is one of the most acceptable techniques, if not the most acceptable, for reconstruction of the mandible.

From October 1999 to March 2001 ten free fibula mandibular reconstructions were undertaken at the Aga Khan University. 9 Nine of these were carried out following tumour excision and 1 one after trauma. 9 Nine of these flaps were osseocutaneous and 1 one was osseous. There were 2 two flap losses while 8 eight flaps survived to give the patients a good cosmetic and functional result.

While the numbers are too small to be of any real significance the early results would tend to justify this major surgery in certain well-defined situations. Type the summary here

**Keywords:** *radial forearm flap, posterior interosseous flap, hand reconstruction*

Plastic Surgery in Pakistan has existed in one form or another ever since its inception in 1947. General Surgeons and ENT Surgeons mainly practiced it all over the country. However, in 1964 Professor Durrani set up the First Nucleus of this specialty in Dow Medical College and Civil Hospital Karachi. Later in 1974 Professor Faiz Muhammad Khan set up a Unit at Jinnah Postgraduate Medical Center. These were the two main Plastic Surgery Units, which produced Plastic Surgeons in Pakistan.

The Department Of Plastic Surgery at Jinnah Postgraduate Medical Center was the first to be recognized by the College of Physicians & Surgeons, for FCPS in Plastic Surgery, and the University Of Karachi for MS Plastic Surgery. The Royal Colleges in the UK also recognized training in Plastic Surgery at Jinnah Postgraduate Medical Center (JPMC). Later the Department of Plastic Surgery at Dow Medical College was recognized for FCPS in Plastic Surgery by the College of Physicians and Surgeons, and for MS Plastic Surgery by the University of Karachi.

By this time other Plastic Surgeons returned to Pakistan who were trained abroad in

addition to those trained at Dow Medical College and Jinnah Postgraduate Medical Center. Prominent among those who returned from abroad were Dr. Gool Talati, Professor Shaista Effendi Raisuddin, now head of the Department at Dow Medical College, and Dr. Fakhr Al Khairy who was Assistant Professor at Dow Medical College and later left his government appointment. Meanwhile, Professor Ghulam Ali Memon had left for Hyderabad after training with Professor Faiz for a short while at JPMC. The Punjab was joined by Dr. Hakimullah Babar, and Dr. Salim Malik.

Dr. Kaneez Fatima was the first to do her MS Plastic Surgery from Dow Medical College, and Dr. Nasir Zaman Khan was the first to obtain an MS in Plastic Surgery from JPMC, both from the University of Karachi. Dr. Ghulam Qadir Fayyaz and Dr. Muhammad Ashraf Ganatra had also acquired their MS in Plastic Surgery from Dow Medical College. By this time Dr. Abrar H. A. Khan and Dr. Tahir Sheikh had returned from the UK and Dr. Shahab Mehdi a little while later. At about the same time Dr. Atia Afaque Hussain had also completed her training at JPMC after she had acquired an FCPS in General Surgery as was the case with Dr. Najeeb Ansari, who had completed his training at Dow Medical College. The Specialty had now begun to flourish and was joined by many other able and qualified Plastic Surgeons, trained in Pakistan and from abroad.

The time had now come to form an association, so in 1994, The Pakistan Association

### **Professor Faiz Muhammad Khan**

*MB, BS., FRCS., FRCS(E), FCPS., FACS., FICS,  
Recipient of the President's Pride of Performance Medal  
Professor of Plastic Surgery*

*Department of Plastic Surgery, Jinnah Postgraduate  
Medical Centre, Karachi*

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*Phone: +92 364 4220998*

of Plastic Surgeons was formed. The Founders were Professor Faiz Muhammad Khan (Founder President), Professor Shaista Effendi Raisuddin (Founder Vice President), Dr. Nasir Zaman Khan (Founder General Secretary), Dr. Ashraf Ganatra (Founder treasurer), Dr. Gool Talati, Dr. Kaneez Fatima and Dr. Atia Afaque Hussain (Founder Members).

The Pakistan Association of Plastic Surgeons held its first international meeting in 1996, at Karachi. This historical meeting was attended by almost all the Plastic Surgeons in the country at the time, which included Dr. Professor Faiz Muhammad Khan, Professor Shaista Effendi Raisuddin, Dr. Fakhr Al Khairy, Dr. Hakim Babar, Dr. Salim Malik, Dr. Abrar H. A. Khan, Dr. Nasir Zaman Khan, Dr. Atia Afaque Husain, Dr. Gool Talati, Dr. Kaneez Fatima, Dr. Ashraf Ganatra, Dr. (Brig.) Amin, Dr. Tajjamal Choudhry, Dr. Tahir Shafi Khan, Dr. Najeeb Ansari, Dr. (Maj) Mamoon Rashid, Dr. Gulrez Rauf, Dr. Obaidullah, Dr. Moiz Sadiq and from the UK by Mr. Nicholas Breech.

Membership was floated at this time, and the meeting was a huge success. Since then the Association has held 6 successful annual meetings all over the country, this year being its 7th.

A journal for the Association was commissioned before the first meeting but could not be launched till now. This year is another historic moment in the history of the Association. The Pakistan Association of Plastic Surgeons now has close to fifty members. There are Units of Plastic Surgery in all four provinces of the country, and all major cities of Pakistan. It is my dream as well as a dream of those who struggled to promote the specialty in Pakistan, that the future brings with it massive progress in this specialty both in education as well as research. I wish the association, as well as the specialty, all the very best in the future.

### **Materials and Methods Article Heading**

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This was a retrospective study of the first 10 consecutive mandibular reconstructions using vascularised fibula performed at the Aga Khan

University in the 18-month period from October 1999 to March 2001.

All 10 patients were operated upon after a thorough discussion of the pros and cons of the various options available and informed consent was obtained.

Preoperatively the patients were examined to confirm the absence of calf claudication and the presence of distal foot pulses. No non-invasive vascular studies or angiograms were performed in any of the patients.

All the patients were operated upon using a multidisciplinary approach. The ablative surgery was performed by the ENT team of surgeons and, once the defect size had been determined, the fibula harvest was performed synchronously. Rigid miniplate fixation was used to fix the fibula in position after one or more osteotomies. End to end vessel anastomosis was performed in each case using 8/0 prolene; only one venous anastomosis was used in each case.

The flaps were monitored using clinical examination alone, supplemented in the single osseous flap with Doppler studies. Anticoagulation was not part of the postoperative protocol.

### **Results Art Head**

There were 10 ten patients. Nine of the reconstructions were following tumour ablation and one following trauma. Of the 9 nine tumours seven were squamous cell cancers, 1 one was a recurrent salivary gland tumour and 1 one was a primary sarcoma of the mandible. The sole trauma patient had sustained blunt trauma many years prior to presentation.

The age range was 16 to 58 years with a mean of 42 years. There were 9 nine males and one female; the latter being the patient with a recurrent salivary gland tumour.

According to the HCL classification of mandibular defects by Jewer<sup>(1)</sup> there were 5 five 'L' defects, 2 two 'LC' defects, 1 one 'C' defect, 1 one 'H' defect and 1 one 'HCL' defect.

The composition of the flap was osseocutaneous in 9 nine of the patients and osseous in 1 one patient.

The total operating time ranged from 9.5 to 11 hours with a mean of 10 hours. The ischemia

time ranged from 2 to 6 hours with a mean of 3 hours. In the initial few patients the osteotomies were performed on the fibula once it had been detached from the leg. This led to an increased ischemia time, which was reduced once the operative technique was modified to allow osteotomies with the flap still perfused in the leg. The inpatient stay ranged from 5 to 28 days with a mean of 10 days.

There were 2 two complete flap losses while 8 eight flaps survived completely. One of the flap losses was put down to venous thrombosis secondary to haematoma formation while the other occurred in the buried osseous flap and was not confirmed till re-operation for infection 7 days postoperatively. The latter was salvaged with debridement and a pectoral myocutaneous flap while the former patient refused further operation at AKU and went elsewhere for treatment. Out of the 9 nine tumour patients 4 four had had previous radiotherapy and all 4 four had recurrent disease.

Besides flap loss other complications included 1 one common peroneal nerve injury, 1 one myocardial infarction and one wound infection at the donor site.

## Discussion

At the outset it is important to understand that no one flap can provide the ideal solution in all clinical situations. However as the free fibula flap has evolved from its early description by Taylor<sup>2</sup> (2) and been recruited for mandibular reconstruction by Hidalgo<sup>3</sup> (3) it has gradually become accepted as the one donor site best able to meet the demands of mandibular reconstruction. The fibula is especially suited for anterior defects or bilateral angle to angle defects to prevent collapse of the mandibular arch. The skin paddle is now accepted as reliable and in fact two independent skin paddles based on the peroneal vessels have also been described (Yang 2000)<sup>4</sup> (4).

The best centers in the world quote free flap success rates in excess of 90 to 95 % though they are somewhat lower for free flaps containing bone (Kroll 1996)<sup>5</sup> (5). Previous irradiation is associated with an increased flap failure rate (Khouri 1998)<sup>6</sup> (6) and an increased risk of complications (Singh 1999)<sup>7</sup> (7).

The conventional argument that such major surgery is not justified in elderly, debilitated patients, often with advanced disease, no longer holds true. In most cases of head and neck cancer morbidity and mortality are produced by local extension and invasion rather than distant metastasis. Thus, local control, by surgery and/or radiation therapy, is the sine qua non of successful therapy (Gurtner 2000)<sup>8</sup> (8). The trend today is to obliterate the disease, obtain local control and then provide the most functional result possible so that the quality of remaining life is as good as possible (Netscher 2000)<sup>9</sup> (9). This often translates into usage of a free flap and sometimes can lead to the use of a second or even third free flap, in sequence, in the same patient (Demirkan 1999)<sup>10</sup> (10). It is pertinent to point out that despite all efforts the overall survival for head and neck malignancies has remained static for the last 30 years (Blair 1994)<sup>11</sup> (11).

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