# The first parathyroidectomy

*Harold Ellis*

Eighty years ago, on 30 July 1925, an historic operation in the evolution of endocrine surgery took place – the first parathyroidectomy for hyperparathyroidism.

The parathyroid gland was recognized as an entity long after the other endocrine organs had been studied in detail. It was first noted, but not named, in 1862 by Richard Owen, conservator at the Royal College of Surgeons of England, who described 'a small, compact, yellow glandular body, attached to the thyroid' when he dissected the first rhinoceros to arrive in this country. (The specimen can be seen today in the Hunterian museum at the Royal College of Surgeons of England.)

The Swede, Ivar Sandstrom, while a medical student at Uppsala, noted and named the parathyroids, first in the dog, then in other mammals, and finally in human dissection in 1880. Friedrich von Recklinghausen of Strasbourg in 1891 reported the autopsy findings of three patients with bone rarefaction, cysts and fractures, which he named 'osteitis fibrosa cystica'. Interestingly, he noted in one patient a 'reddish brown lymph node' below the thyroid – in hindsight, a parathyroid tumour. In 1915, Friedrich Schlagenhaufer in Vienna described two patients with bone rarefaction who each had a solitary parathyroid tumour revealed at autopsy and suggested that this was the cause of the bone changes.

And so we come to the first parathyroidectomy. The patient was a tram car conductor aged 38 years. In 1921 he complained of leg pains. Two years later, X-rays revealed skeletal rarefaction and bone cysts. In 1924 he was admitted under Felix Mandl to the University Clinic, Vienna, with a fractured femur. His blood and urinary calcium levels were greatly elevated and a diagnosis of osteitis fibrosa cystica was made.

Because Mandl thought the calcium changes were caused by parathyroid deficiency, parathyroid extract was given, then a graft of fresh parathyroid, taken from the victim of a road traffic accident; not surprisingly, the patient got worse. So, in July 1925 Mandl explored the patient's neck under local anaesthesia. A yellowish-brown tumour, measuring 21x15x12 mm, was removed from behind and below the left lobe of the thyroid. The results were quite dramatic – the calcium levels in blood and urine returned to normal, the bone pains cleared, the X-rays showed recalcification and the patient was walking on crutches in 3 months.

He remained well for 6 years, then developed a renal stone and recurrence of his hypercalcaemia. Mandl re-explored the neck but found no parathyroid mass. The patient died in February 1936. Although no parathyroid tumour was found at post-mortem, we can guess that there might have been a further adenoma at an ectopic site, perhaps in the mediastinum, a phenomenon not recognized clearly at that time.

Mandl's publication of this case report in 1926 clearly put hyperparathyroidism, elevated levels of serum and urinary calcium and von Recklinghausen's disease of bone as a distinct and curable entity.

Felix Mandl (1892–1957) was born in Brno, then in Austria, now in the Czech Republic, the son of an industrialist. His medical studies in the University of Vienna were interrupted by the First World War, during which he served on the Austrian front as an ambulance man. He qualified in 1919. Four years later, he was appointed assistant to Julius von Hochenegg, a distinguished but autocratic and cantankerous chief, at the University Clinic, and it was here that the parathyroid work was performed.

In 1932, Mandl was appointed surgeon to the newly opened Canning Child Hospital and Research Institute for the Study of Cancer, a prestigious promotion, but his time there was to be all too short. In 1938 came the Anschluss – the Nazis marched into Austria. Mandl, a Jew, was dismissed from his post and, indeed, his life was in danger. He was fortunate in being able to escape to what was then Palestine, under the British Mandate, and was promptly appointed professor of surgery at the prestigious Hadassah Hospital in Jerusalem.

After the war, he was invited back to Vienna in 1947, to become director of the rebuilt Emperor Franz Josef Hospital. He died suddenly of heart failure in 1957, in his 65th year; a remarkable career.

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Mandl F (1926) Klinisches und experimenteles zur fraga der lakalisierten und generalisiereten osteitis fibrosa. *Arch Klin Chir* **143:** 245–84