myasthenia, and reviewed all the cases of familial myasthenia gravis recorded in the literature up to that time, bringing the total number to 54, distributed among 22 families.

The four cases reported here bring the total so far to 58 cases in 23 families. Since in these cases the lesion is mostly confined to the ocular muscles the problem of differentiation from ocular myopathy (Kiloh and Nevin, 1951) arises. But the tendency of the disability to worsen towards evening and the favourable response to the administration of neostigmine favoured the diagnosis of myasthenia gravis.

Certain other observations may be made in these cases. They represent individuals of two generations. In only four of the 22 previously reported families were two generations affected. Peters (1906) reported the cases of two sisters, two brothers, and the father. Noyes (1930) reported cases of a brother, sister, and father ; Eaton (cited by Levin, 1949) the cases of a father and son ; and Foldes and McNall (1960) the cases of two sisters and their mother. The present report is the fifth instance of familial myasthenia gravis affecting more than one generation. Celesia (1965) observed that in instances where more than one generation is affected by the disease the onset is in adulthood. Our cases, however, prove otherwise, for Cases 3 and 4 showed myasthenic symptoms from birth.

The first case of congenital myasthenia was reported by Bowman (1948). Levin (1949) considered three types of myasthenia gravis in children. They are the transient neonatal myasthenia, the familial myasthenia occurring in siblings, and the ordinary or acquired myasthenia. Acquired non-familial myasthenia is rare in childhood ; but among 41 cases of familial myasthenia limited to one generation, in 20 the onset of the disease was in infancy and in 12 in childhood or adolescence (Celesia, 1965). All our four cases had their onset before the age of 16 years, thus proving the early age of onset in familial myasthenia. This difference of the familial cases from the non-familial ones may be of importance from the genetic point of view.

Levin (1949) used the term "congenital myasthenia" to describe the form of myasthenia which begins at birth (or before), and is characterized by a mild onset, marked external ophthalmoplegia, partial ptosis, and symmetrical weakness of the involved muscle groups. In contrast to the usual myasthenia gravis it is not progressive and does not show remissions. There is a dramatic response to the administration of neostigmine. Though the basic defect is the same the disease may be different from the myasthenia gravis described by Erb (1879) and Goldflam (1893). Among the cases of familial myasthenia gravis reported there are only six patients in four families in whom the disease was present from birth and hence qualify as congenital myasthenia. These were reported by Levin (1949, two cases in a family), Osserman (1961, three cases in two families), and Walsh and Hoyt (1959, one case in a family with four affected members). In all these cases ptosis, ophthalmoplegia, and generalized weakness were the prominent symptoms. Our Cases 3 and 4 are the seventh and eighth cases of congenital myasthenia gravis among the familial myasthenics recorded to date. Though Levin thought it probable that these cases would show marked improvement in course of time, one of our patients died at the age of 3 years from an intercurrent respiratory infection.

So far there is only one report of thymus enlargement in familial myasthenia gravis. At necropsy Marinesco (1908) noticed persistence of the thymus, and the histopathological features suggested hyperplasia. In our Case 2 the *x*-ray picture of the chest showed widening of the superior mediastinum consistent with enlargement of the thymus.

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C. B. C. WARRIER, M.D., B.SC., M.R.C.P., Assistant Professor.
T. D. G. PILLAI, M.R.C.P.ED., Associate Professor.
Department of Medicine, Medical College, Calicut, India.

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# Self-inflicted Oleogranuloma of Breast

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While oleogranuloma of the breast is a well-recognized condition in the Orient, it must be unusual to encounter a case in Britain. The following case of bilateral granulomata of the breasts in an English woman is especially interesting, in that the condition was self-inflicted after she had read an article in the lay press which mentioned that Japanese women have had petroleum jelly injected into their bosoms to increase their size.

## CASE REPORT

An unmarried woman aged 26, the mother of twins aged 6 years, was concerned about the flatness of her chest and consulted a plastic surgeon who, 10 years previously, had removed a tattoo from her arm. As she had recently been under psychiatric treatment, it was thought unwise to advise operation at that time. She therefore decided to treat herself by making multiple injections of warm, molten petroleum jelly into each breast, using a 20-ml. syringe and intramuscular needles which she had purchased for this purpose. Pain was not experienced at the time of the injection, but several days later she described tenderness and discomfort in both axillae. This was followed during the next few months by a severe reaction, more marked on the right side, and the breasts became nodular, painful, and inflamed, and finally sinuses formed exuding petroleum jelly (Fig. 1).

Mammograms showed extensive cystic changes in the breasts, presumably due to grease globules (Fig. 2). *Treatment :* Bilateral simple mastectomy was advised but rejected by the patient. It was therefore decided to try to evacuate the grease globules through several small incisions. Each breast was operated on separately, with an interval of three months between operations.

At operation some of the oleogranulomata were so well defined that they could be dissected free intact (Fig. 3). Other areas of the breast had diffuse fibrotic changes with infiltration of grease, and the best that could be done here was to extrude as much of the petroleum jelly as possible. The wounds were closed and a small corrugated rubber drain was inserted. Postoperative antibiotic therapy was given, though bacterial culture of the excised tissue was sterile. The wounds healed by first intention and the breasts have remained free from further discharge. As expected, the breasts were still quite flat and the patient was still seeking mammoplasty.

Histology of the removed lumps showed the typical appearances of oleogranulomata, there being multiple cystic areas surrounded by dense fibrous tissue and foreign body giant cells (Fig. 4).

### Comment

As early as 1903 Gersuny suggested that paraffin waxes of high melting-point could be used as a subcutaneous implant to alter surface contours. It was soon found, however, that in a proportion of cases the late results were far from satisfactory owing to the formation of oleogranulomata, followed by ulceration of the overlying tissues and persistent discharging sinuses.

While this method of mammoplasty has been abandoned by medically qualified persons, occasionally one comes across such a case as that described, but this is more common in the East (Tinckler and Stock, 1955).

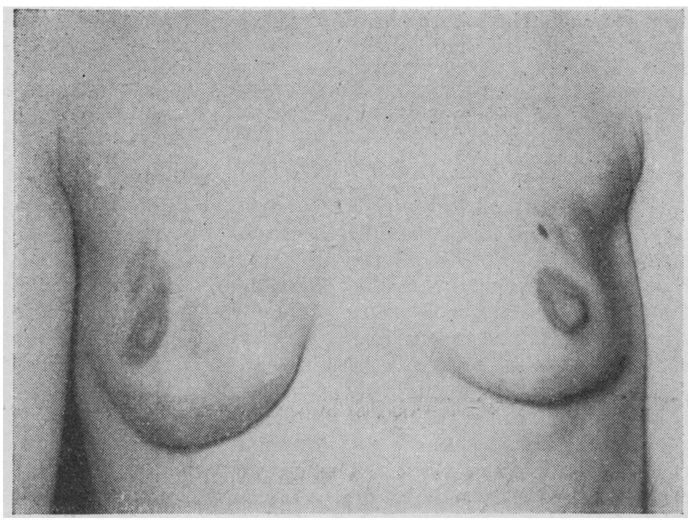

FIG. 1.—Induration and sinuses in both breasts after an intramammary injection of petroleum jelly.


FIG. 2.—Bilateral mammograms: extensive cystic changes shown on left side (arrowed) presumably due to grease globules.

Histologically there is no difference between the oleogranuloma so formed and that encountered as a result of accidental injection with a high-pressure spray gun. Another less abstruse cause of oleogranulomata is the injection of haemorrhoids with phenol in almond oil, a procedure which is not without its hazards.

FIG. 3.—Two oleogranulomata dissected intact from the breast.

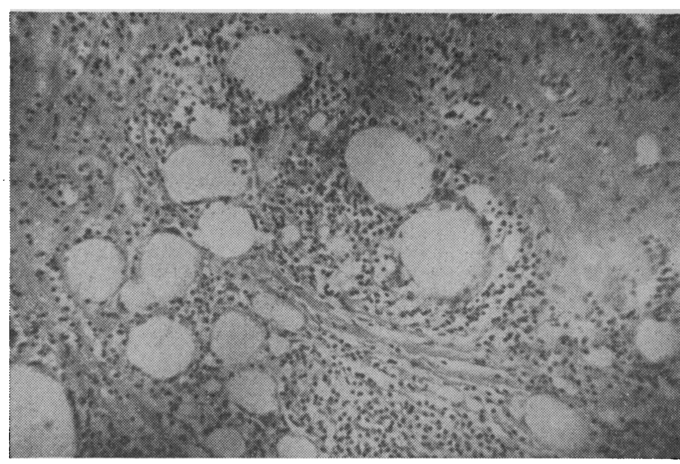

FIG. 4.—Microscopical appearance of oleogranuloma (low power).

Oleogranulomata in the main are themselves relatively harmless except for the mechanical difficulties they may cause, depending on their site. If, on the other hand, ulceration of the overlying skin occurs with the formation of a persistent discharging sinus, then neoplastic change sometimes occurs at the edge of the ulcer so formed (Vinogradov, 1936).

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R. B. CROSBIE, M.B., B.SC., F.R.I.C., F.R.C.S., F.R.C.S.ED.,
Senior Surgical Registrar, Royal Southern Hospital, Liverpool 8.

H. D. KAUFMAN, CH.M., F.R.C.S., F.R.C.S.ED.,
Senior Surgical Registrar, Broadgreen Hospital, Liverpool 14.

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