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Incidence of Congenital Pyloric Stenosis in Malta

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The first operation for congenital pyloric stenosis in Malta was carried out in 1949. Up to that time it was thought that this disease did not exist locally. However, an increasing number of cases have been diagnosed since then: presumably this is due to more accurate diagnosis and to the fact that doctors have become more aware of its existence. The purpose of this paper is to review the incidence of congenital pyloric stenosis in Malta as well as to compare this incidence to that of other countries.

TABLE I

INCIDENCE OF CONGENITAL PYLORIC STENOSIS BETWEEN 1952–1964

Year	No. of Live Births	No. of Cases	% Annual Incidence
1952	8,501	8	0·049
1953	8,302	4	0·048
1954	8,287	6	0·072
1955	7,899	3	0·038
1956	7,794	5	0·064
1957	8,117	11	0·135
1958	7,872	5	0·063
1959	7,825	6	0·076
1960	7,847	7	0·089
1961	7,674	3	0·039
1962	7,506	8	0·106
1963	6,672	11	0·164
1964	6,359	12	0·188
Totals	100,655	89	

Clinical Material

Between 1952 and 1964, 89 cases of congenital pyloric stenosis were seen at St Luke's Hospital. Ramstedt's operation was carried out on all the cases. Table I shows the number of cases per year in relation to the number of live births. Of these patients, 50 were under the care of one of us (E.A.C.), and Table II shows the birth order of these 50 patients. The incidence in the first-born and second-born child was practically equal, both groups making up 64% of the series. Cases in later-born children did occur and one of the children affected was the twelfth child. Of the 89 patients, 65 were male and 24 were female. There were 2 cases in a family with 3 children, the first two born were affected and both patients were male. The youngest child operated on was 10 days old and the oldest was 4 months.

TABLE II

BIRTH ORDER OF 50 PATIENTS

Birth Order	No. of Patients
1st	17
2nd	15
3rd	7
4th	2
5th	1
6th	1
7th	—
8th	1
9th	2
10th	1
11th	2
12th	1

In Malta, there are no records of the proportion of first-born in the country as a whole, so the births that took place between 1960 and 1964 in the maternity unit of this hospital were accordingly analysed. We believe that this is fairly representative of the whole island as the admissions to our hospital are unselected. Stillbirths were excluded. Table III shows the number of first-born and later-born occurring in the last five years of the period under review. The percentage of first-born is 25·55%.

TABLE III

ADMISSIONS TO THE MATERNITY SECTION OF FIRST- AND LATER-BORN

Year	No. of Live Births	First-born	Later-born
1960	2,214	589	1,625
1961	2,242	446	1,796
1962	2,112	508	1,604
1963	2,043	506	1,537
1964	1,988	660	1,328

Discussion

The incidence of pyloric stenosis is affected by such factors as sex, birth order, heredity, and race. The increasing tendency for the disease to affect

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the first-born children and males has been amply confirmed by this study. McKeown and MacMahon (1955) found that the offspring of parents, one of whom had recovered from pyloric stenosis, were more liable to develop pyloric stenosis when the mother was the affected parent. This has further been confirmed by Carter (1961).

Carter and Savage (1951) in their study on 4 first-cousin twins found that identical twins seemed to be more affected than fraternal twins of like sex, and that the incidence was higher than in the general population. Moreover, children of men and women who recovered from pyloric stenosis had an increased liability of developing the disease (Carter and Powell, 1954; McKeown and MacMahon, 1955). Carter (1961) states, 'relatives of female index patients have considerably higher risk of being affected. For any index patient the risk of being affected is rather higher in female than in male relatives'. As more survivors of infantile pyloric stenosis begin to have their own families, the number of particularly susceptible newborn seems likely to increase (*Lancet*, 1956), though Wallgren (1960) has reported that the incidence in Gothenburg has actually gone down from 0·4 to 0·199%.

Racial factors also play an important role. In the United States, the incidence in the Negro is significantly lower than in the white population (Laron and Horne, 1957). In Europe most of the evidence suggests that the disease is more common in the Northern European countries such as Sweden and the United Kingdom. In Italy, it is reported to be rare (Cocchi, 1950). Wallgren (1941) quoted Eckhaus from Turkey who demonstrated the rarity of pyloric stenosis in that country. Laron (1955) reported the lower incidence in Israel as compared to that in Sweden. Infantile pyloric stenosis is unknown in Malaya (Field, 1951) and it has not been reported in the Australian Aborigine (Watson, 1956). In Malta, the incidence over a 13-year period is 0·088% ± 0·114. This incidence is higher than that of Israel and presumably higher than that of Italy and Turkey. Of the 89 patients, 7 had typical English surnames. At the start of its association with Britain in 1800, Malta's population was 90,000; it has now increased to just over 300,000. In these 160 years, marriages between the Maltese and British servicemen were not infrequent. We believe that this genetic mix-up of the Maltese population could well account for the higher incidence of congenital pyloric stenosis in Malta as compared to that of neighbouring Mediterranean countries.

TABLE IV

INCIDENCE OF PYLORIC STENOSIS IN DIFFERENT COUNTRIES

Country	Year	Author	% Incidence
England	1946	Davison	0·28
Israel	1955	Laron	0·5
Italy	1950	Cocchi	Very rare
Malaya	1951	Field	Unknown
Malta	1965	Present study	0·088 ± 0·045
Scotland	1956	McLean	0·3
Sweden	1941	Wallgren	0·4
Sweden	1960	Wallgren	0·199
Turkey	1941	Eckhaus	Very rare
U.S.A.			
White	1957	Laron and Horne	0·12 ± 0·04
Negro	1957	Laron and Horne	0·046 ± 0·044

Summary

This paper reviews the incidence of congenital pyloric stenosis in Malta. There were 89 patients who presented during the 13-year period, giving an annual incidence of 0·088%. This is below that found in the United Kingdom and Sweden and higher than that of some Mediterranean countries.

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