

A MATERNITY UNIT IN GOZO A HUNDRED YEARS AGO

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ABSTRACT

The present paper reviews the hospital confinements which occurred at Victoria Hospital in Gozo during the period 1876-1893. These hospital confinements are shown to have been generally restricted to needy women from the lower socio-economic strata. The lower socio-economic status of these mothers, together with the fact that these mothers were more likely to have significant medical and/or obstetric problems, resulted in higher perinatal and maternal mortality rates than those reported for the general population in Gozo and Malta. These observations are in conformity with the maternity care situation in European establishments.

Keywords: history, maternity care, obstetric mortality.

Introduction

The island of Gozo is the second smaller island of the Maltese archipelago situated in the Central Mediterranean with an overall area of 26.974 sq. miles and a total population in 1891 of 9,681 individuals¹. The first woman hospital in Gozo dedicated to St. Julian dates to 1454. In 1783 a new women's hospital accomodating fifty patients and receiving also unmarried pregnant women who sought refuge at the approach of labour, was built. These facilities were transferred in 1838 to the Hospital of St. John the Baptist situated at Rabat. This hospital changed its name to Victoria Hospital on the occasion of Her Majesty Queen Victoria's Jubilee in 1887². The present study reviews the Register of Admissions and Discharges for Lying-in Women at Victoria Hospital for the period 29 March 1876 to 30 April 1893 (2 vol)³. There were a total of 396 admissions to the maternity unit, of which 358 (90.4%) delivered their infant/s. The registers included information pertaining to patient identification (name, surname, birthplace and residence), to the patient's sociobiological characteristics (age, marital status, profession, spouses' occupation, parity, religion, economic status), information about the medical and obstetric history of the patient together with notes on the present pregnancy.

Sociobiological Characteristics

The mean maternal age of the women admitted to the hospital during the period under review was 32.26 sd 6.9 years with the youngest mother being aged 15 years and the oldest three patients

aged 46 years. Age at marriage is an important demographic parameter about the past since the number of children born is particularly dependant on the age of the bride. The mean age of primigravid mothers in this present series (n=59) accounting for 15.2% of the study population was 23.9 years, while if only legitimate pregnancies (n=38) are considered, then the mean age of primigravid married mothers was 24.9 years. The mean paternal age was 36.32 sd 10.1 years with the youngest father being 18 years and the oldest 83 years. A large proportion of births (8.6%) were illegitimate.

Grand multiparity appeared to have been a common feature in the late nineteenth century so that 35.9% of patients had had 5-9 previous pregnancies, while a further 8.9% had had ten or more previous pregnancies. The mean previous gravidity excluding the index pregnancy was 4.4 pregnancies including abortions. The fetal-infant wastage was apparently very high, so that the mean number of living children at the time of admission was 2.7 children, a figure suggesting a mean household size of 4.7 individuals. The patient with the highest gravidity in the present series was a 40 year old married woman from Nadur who was in her 19th pregnancy at admission. All previous pregnancies were

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normal and she had 16 living children. Her husband was a 46 year old labourer. The mean parity distribution by age suggests that no method of contraception was in use by this section of the population (Figure I). The patients came from the lower socio-economic groups with the majority (99.2%) being registered as paupers, while the spouses' occupation was generally registered as artificers/labourers (73.8%) or mariners/farmers (16.9%).

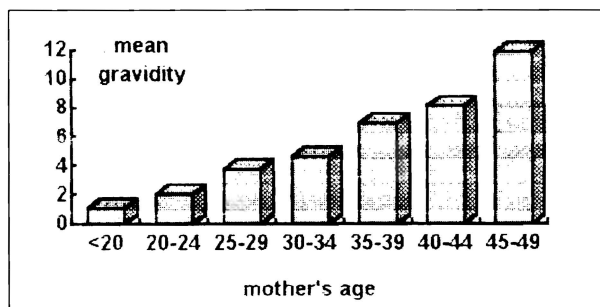


Figure 1 - Gravidity by Age distribution

Medical Characteristics

The diseases of pregnant women were considered in the late 19th century as either exacerbations of the casual deviations from a perfectly healthy condition which thus transgress the limits of health; or incidental disease not directly due to pregnancy but whose progress is specifically modified by it; or affections of the sexual organs; or finally anomalies in the development of the fetus⁴. The abnormalities specific to pregnancy were considered separately. The patients admitted to Victoria Hospital during the period under review were reported to have variable medical conditions the majority being incidental disease, some of which, however, were directly or indirectly responsible for causing a perinatal and/or maternal death. Thirty five patients (8.8%) admitted to the hospital were reported to have some form of pre-existing condition or were currently suffering from some symptomatology or disorder (Table I). There were two cases of antepartum haemorrhage (0.5%), one of which terminated in a preterm delivery at about 27 weeks gestation. The female infant died two days after delivery from debility. The second case delivered at term without any adverse outcome. There was only one case of eclampsia admitted to the hospital (0.3%). This occurred in a 17 year old primigravid woman whose first fit occurred four hours prior to admission. The patient continued being seized frequently by eclamptic fits. Delivery was 'manual' with the birth of a mature female child.

Both mother and child survived into the puerperium.

The majority of disorders considered as deviations from healthy conditions caused only a minor inconvenience to the patient. Two cases, one of anasarca and another of dropsy, terminated in a bad perinatal outcome. The case of dropsy was one of multiple pregnancy admitted in preterm labour at about 36 weeks pregnancy. Both infants were born alive though feeble and died later. The case of anasarca similarly terminated in a preterm labour at about 28 weeks pregnancy. The male child was born in a feeble condition but survived the puerperium. Oedema of pregnancy is associated with a large variety of conditions ranging from the effects of pressure by the enlarged uterus to hypertensive disorders of pregnancy.

TABLE I - Antenatal Medical Disorders

Antepartum Disorders	No. of Cases
a) Deviations from health conditions	
1. Oedema, dropsy, anasarca	3
2. Varicose veins - haemorrhoids	1
3. Gastric disorders	5
4. Acute gastro-lumbar pains ? cause	1
5. Lumbago	3
6. Debility ? cause	1
b) Incidental disease	
1. Respiratory disorders	
a) asthma	1
b) bronchitis	2
c) phthisis pulmonaris	2
d) pneumonia	1
2. Heart disease	1
3. Renal disease - nephritis	1
4. Other	
a) ophthalmia, blindness, conjunctivitis	4
b) nevifibroma	1
c) weak mind	1
d) semiparalysis right hand	2
e) abscesses	1
c) Pregnancy disorders	
1. Metrorrhagia - A.P.H.	2
2. Eclampsia	1

A number of the incidental disorders were associated with a bad obstetric outcome. The two cases of phthisis pulmonaris (tuberculosis) terminated in a maternal death, as did the case of pneumonia. Chronic disease of the air passages,

especially of the lungs, in which the respiratory surface is diminished, may be affected by pregnancy and labour. Amongst acute disease, true pneumonia is a highly dangerous complication. Women showed a greater mortality from the disease than do males, and this mortality was particularly high during pregnancy. Pregnancy was not infrequently interrupted naturally. Induction of preterm labour was to be avoided. Medicinal treatment was the same as that used in the non-puerperal state, digitalis having a special value, while venesection being practiced when threatening symptoms were present. The latter could bring on collapse and onset of labour. Tuberculosis had been previously considered to be a minor disease during pregnancy, but the lying-in condition was noted to have a more injurious influence where the disease was already present and it often accelerated a fatal end. Although pregnancy usually reached full term in spite of progressive tuberculosis, it was not rare for labour to come on some weeks too early; abortion could also take place, and was as injurious to the phthisical woman as was the lying-in period after a premature or a full term labour⁵. Tuberculosis appears to have been not an uncommon disease in the Maltese Islands in the 18th century especially towards its close. Towards the mid-nineteenth century, poverty, bad housing conditions and overcrowding were certainly favourable for the spread of the disease.

The improvements in the economic state of the Island and the introduction of sanitary reforms at the beginning of the last quarter of the century were accompanied by a reduction in the general death rate. The mortality from phthisis showed a parallel decline from 1 per 1,000 population in 1874 to 0.8 in 1876 constituting 3.6% of the total amount of deaths⁶. The mother dying from pneumonia was a 38 year old gravida 7 patient transferred to the Lying-in Ward from the Medical Female Ward of the Hospital because of premature onset of labour at about seven months gestation. Delivery was natural. The mother became worse in the puerperium and died two days later. The infant died from prematurity. The cases of tuberculosis were similar. The first was a 23 year old gravida 4 patient who was admitted to the ward in preterm labour at about 8 months gestation. The patient became worse during the puerperium and died soon after delivery. The infant similarly died from prematurity. The second case was a 32 year old gravida 3 patient who delivered at term. The mother died ten days after delivery as a complication of her tuberculosis. The infant

survived and was given out by the hospital to be nursed. Other conditions which terminated in a bad perinatal outcome in the present series included mothers with heart disease and nephritis. The former case was a 46 year old gravida 6 patient who was transferred in labour to the Lying-in ward from the Female Medical Wards of the Hospital at about eight and a half months gestation. The delivery was natural and the placenta was extracted after the birth of the child. The patient's condition deteriorated as a result of her heart disease and she died on the same day of her delivery. The infant similarly died on the same day of birth from prematurity. The mother suffering from nephritis was similarly admitted to the Lying-in Ward from the Medical Ward when premature labour occurred at the seventh month of pregnancy. The mother survived the puerperium, but the infant was a stillbirth caused by 'degeneration of the placenta'. Labour was apparently complicated by an intrapartum haemorrhage (abruption?).

Puerperal disorders reported in the registers similarly ranged from minor symptomatology to severe disorders resulting in maternal deaths. The disorders reported included 7 cases of gastric disorders, 1 case of bronchitis, 1 case of enteritis, 1 case of postpartum haemorrhage, 4 cases of sepsis, and a case of puerperal collapse following a prolonged labour. There were a total of seven maternal deaths in the series (2.0%). A number of these were associated with pre-existing maternal conditions while the remainder resulted from intra or postpartum complications. The four maternal deaths caused by pulmonary tuberculosis (2 cases), pneumonia and heart disease have been previously described. The other three deaths were caused by enteritis, prolonged labour and metro-peritonitis. The mother dying from enteritis was a 39 year old gravida 10 patient who had a normal delivery at term. She was apparently seized by an attack of enteritis which caused her death 15 days after her delivery. The infant remained healthy. The mother dying from prolonged labour was a 35 year old primigravida patient admitted to the hospital after labouring for 3 days at home. The cause for the prolongation of labour was noted to be 'spasmodic stenosis of the vaginal canal'. Delivery was manual, with the placenta being extracted immediately after delivery. The infant was stillborn. The patient's condition deteriorated and she was seized by a general collapse that led to her death a few hours after delivery. The cause of death was recorded to be 'distocia'. One mother died as a result of puerperal infection, though a further three cases

of sepsis were recorded (1.1%). The mother dying from puerperal sepsis was a 36 year old gravida 10 patient who delivered twins, the first alive by natural delivery, the second stillborn by manual delivery. The second fetus presented by the left hand (transverse presentation, hand prolapse). The placenta was extracted immediately after delivery of the second child. The mother developed metro-peritonitis and died three days after delivery. Two cases of puerperal fever followed normal deliveries. The third complicated a case of face presentation which required a manual delivery. The case was further complicated by intrapartum haemorrhage. The infant was stillborn.

Puerperal sepsis was a common problem resulting in marked maternal mortality and morbidity, and remained so well into the twentieth century when reorganization of maternity services, aseptic techniques and antimicrobials helped decrease both the incidence and mortality from sepsis ⁷. The first concentrated effort to control puerperal sepsis was undertaken at the turn of the 19th century with the publication and enforcement of the 'Regulations respecting midwives' ⁸. These regulations however took time to be well enforced in the Lying-in Wards at Victoria Hospital in Gozo. In August 1903, the Medical Officer in charge of the Charitable Institutions in Gozo wrote: *"What the midwife in charge is expected to do is to assist any women in labour, to give her first dressing after confinement and to entrust the further treatment of the patient to Hospital nurses. Sir, I consider this system greatly objectionable both as regards danger of infection, which might be easily conveyed from the underlying Hospital to the Lying-in Ward and the want of practical knowledge on the part of the nurses to deal with puerperal cases. To remedy the inconvenience I feel it my duty to lay great stress on the advisability of discontinuing such a practice and beg to suggest that whilst excluding the female nurses from any duties in connection with what is expected to be performed by a trained midwife - the midwife i/c be made to abide by the regulations provided by law, which establish, besides other duties, that any midwife in the exercise of her profession is to visit her patients twice a day for the period of eight days from the date of confinement"*. ⁹

The perinatal outcome for the child was generally good, there being a total of 16 stillbirths (stillbirth rate 44.0 per 1000 total births) and 23 neonatal deaths (neonatal death rate 66.1 per 1000 livebirths). The causes of death for the

stillbirths as registered or as indicated by the medical data given included intrapartum asphyxia from prolonged labour or a traumatic delivery (8 cases - 2 face presentations with manual delivery, 1 breech delivery, 1 transverse second twin, 2 prolonged labour, 1 manual delivery, a deviation of fetal head with manual correction); cord complications (3 cases - 1 torsion of the cord, 1 cord prolapse in a case of contracted pelvis, 1 cord around neck); prematurity (2 cases); macerated stillbirths (2 cases); and one undetermined. The causes of neonatal deaths included prematurity (7 cases - one case of twins); trismus (5 cases); birth asphyxia/trauma (5 cases); debility (2 cases); enteritis (1 case); phlegmon (1 case); and one undetermined cause. Ten other infants were born in a feeble condition, but survived the neonatal period and were discharged from the hospital. There were ten premature deliveries, one a case of twin pregnancy (prematurity rate 27.9%). Only one survived the neonatal period to be discharged from the hospital. There were six cases of twin pregnancies (twin pregnancy rate 16.8 per 1000 deliveries). The majority of these survived. Two cases were associated with a bad perinatal outcome. One patient delivered a stillborn twin after a manual delivery for a hand prolapse in a transverse lie in a second twin. The second case delivered prematurely and both infants died in the early neonatal period.

The majority of labours progressed spontaneously, there being only 23 (6.4%) cases of manual delivery, the remainder being natural sive mechanical deliveries ¹⁰. The manual deliveries were conducted by a medical practitioner except for four cases which are registered as conducted by the attending midwife. No further data is available regarding these cases. The operative procedure appears to have been undertaken for 'want of contractions' possibly secondary arrest of labour (5 cases); malpresentation (3 breech cases, one complicated further by a cord prolapse which terminated satisfactorily; one transverse lie in a second twin); malposition of the fetal head (2 face presentations, one malposition requiring adjustment); dystocia (1 obstruction of os uteri, one contracted pelvis complicated by cord prolapse, one rigidity of vulva, one rigidity of cervix, one spasmodic stenosis of the vaginal canal); one case of impacted shoulders; and a case of manual delivery performed in a patient with eclamptic fits. Ten cases (43.5%) terminated in a stillbirth, while two cases terminated in a maternal death. One of the cases of manual delivery is detailed in the

correspondence books for the hospital ¹¹. The case involved a 35 year old gravida 7 woman admitted in labour at 1700 hours on the 28th July 1887. She gave a history of having had a manual delivery in her previous pregnancies. It appears from the correspondence that in spite of very strong uterine contractions for a period of 25 hours, labour had not progressed satisfactorily, and vaginal examination failed to identify the presenting part. After a further five hours of very strong tetanic contractions, a malpresentation (breech presentation) was identified, and the attending Resident Medical Officer decided to call for help since the necessary "... operazione ostetrica, come principio fondamentale non die giacumai essere eseguita da un solo pratico, ma questi die essere accompagnato se no da 2, almeno da un altro ostetrico". The patient was delivered of a stillborn female infant on the 30 July at 0030 hours after a labour lasting 31.30 hours. The mother survived the puerperium.

The third stage of labour was assisted in a total of 25 cases (7.0%), with the majority (12 cases) following a manual delivery by a medical practitioner, or after the birth of a stillbirth by a mechanical delivery (3 cases). The remainder were performed for a variety of purposes including atony of the womb with slight postpartum haemorrhage (1 case), preterm labour in a heart case mother (1 case), hyperadherent placenta extracted one hour after birth of the child (1 case), precipitate delivery complicated by cord rupture and uterine atony (1 case), feeble labour (3 cases, one complicated by postpartum haemorrhage, another after a twin birth). The remaining cases delivered their placenta spontaneously after a period of a maximum of 30 minutes.

Discussion

The medical services in Malta and Gozo had been very well developed by the end of the 18th century as a legacy of the efforts and interests of the Knights of St. John. The majority of deliveries in the Islands were conducted in the home, generally under the supervision of a midwife or a birth attendant usually the mother of the mother-to-be. The mean annual deliveries at Victoria Hospital in Gozo was 21.1. These were usually needy women or unmarried mothers. The concept of midwifery care in the hospitals followed closely the concepts practiced on the continent particularly in France. The leading training school for midwives in France during the seventeenth century was the Hotel-Dieu in Paris. The hospital, in the tradition of its

religious foundation, was a charity; anyone was accepted as a patient, and in the maternity wards, no questions were asked. Many of the children were illegitimate. In 1678, some 1500 children were born. Women were admitted in the last two weeks of pregnancy. Puerperal fever was rife, even though visitors to the maternity wards were not allowed in without a pass ¹². In the United Kingdom, the first Lying-in institution for the relief of poor married women was only opened in 1739 by Sir R. Manningham in Westminster. Permanent institutions were subsequently founded in the principal cities ¹³. The number of deliveries in these institutions remained low, so that in 1875 there were 394 deliveries in Queen Charlotte's Hospital, 400 in the City of London Hospital, 264 in York Road Hospital and 155 in British Lying-in Hospital. At the beginning of the 19th century on the continent, the number of annual births in the Maison d'Accouchements (Paris) approximated 1842, while in the Hospital of St. Catherine (Milan) the number was 296 ¹⁴.

With the policies of hospital admissions for maternity cases it is not in the least surprising that the women delivering there came from the lower socio-economic groups of the community. This selection accounts for the discrepancies in the hospital statistics compared to the overall statistics for the Island ¹⁵. The stillbirth rate for the Gozo hospital stood at 44.0 per 1000 total births, a figure approximately 3.1 times the overall rate reported for Gozo in 1895 which stood at 14.2 per 1000 total births. The figure for Gozo was lower than that reported for Malta during the same year which was reported at 27.2 per 1000 total births. The infant mortality rate for the Maltese Islands stood at 224.9 per 1000 live births. While the death rate for neonatal 'affections consequent on parturition' stood at 32.95 per 1000 live births. The rate of affections consequent on parturition was higher in Gozo at 60.5 per 1000 live births than in Malta at 25.9 per 1000 livebirths. These figures compare favourably with figures reported for England during 1838-39, when the neonatal death rate was 44 per 1000 live births and the infantile death rate was 159 per 1000 live births ¹⁶.

A larger proportion of the neonatal deaths from Gozo accounting for 43.8 per 1000 live births were attributed to tetanus neonatorum, a cause which was also prevalent in the hospital accounting for five of the neonatal deaths (rate 14.4 per 1000 live births). The rate of deaths caused by tetanus neonatorum in Malta was much lower at 7.2 per 1000 live births ¹⁷. This discrepancy between the Islands reflects the rural

and social conditions prevalent in Gozo, conditions which were conducive to the development of tetanus in the newborn. In the late 19th century trismus was believed to be possibly caused by too high a temperature of the water used for the child's first bath¹⁸. Difficult labour as a cause of neonatal death in Gozo in 1895 accounted for 9.0 per 1000 live births, in contrast to a rate of 14.4 per 1000 live births in the hospital. This difference suggests that there may have been a tendency towards referral of difficult cases to the hospital after failure to deliver at home. One case in the hospital series was referred to the hospital after labouring three days at home¹⁹. The incidence of difficult labour reported for Malta in 1895 was 16.0 per 1000 live births²⁰.

Puerperal sepsis was a common problem in the late 19th century. The incidence of puerperal sepsis in Gozo for 1895 stood at 3.86 per 1000 total births, with a mortality rate of 1.29 per 1000 total births. The incidence of puerperal sepsis in the hospital was markedly higher at 11.0 per 1000 total births and accounting for a mortality of 2.8 per 1000 total births. The higher incidence in the hospital reflects the adverse puerperal care and attention given to delivered women, associated with the possibly increased recourse to operative interventions. The adverse conditions in the hospital were well described in 1903²¹. The incidence of puerperal sepsis in Malta was reported in 1895 as 5.49 per 1000 total births, and accounted for a mortality of 3.61 per 1000 total births²². The management of the puerperium was aimed at preventing the development of this complication with semi-isolation of the patient for ten days, syringing the vagina with 1 in 4000 solution of sublimate or Condy's fluid for about 20 days, and careful perineal care. Any signs of fever were to alert the attending midwife to call in a medical practitioner. It appears that the practice of vaginal douches was being questioned²³. The history of puerperal sepsis during the nineteenth century was one of tragedy since while it was becoming plain that the medical attendant during delivery was often the unconscious agent for transmitting the disease, yet no effort was made to control the transmission. After 1875, there was a gradual development of medical

bacteriology which brought on an enlightenment as to the aetiology of puerperal sepsis, and established the means of controlling the disease. The maternal mortality rates in various hospitals in Europe varied from one institution to another and was dependant on the incidence of puerperal fever. Hospital mortality from puerperal fever was markedly higher than in the general population. The maternal mortality rate for the City of London Lying-in Hospital during 1851-1875 averaged 27 per 1000 births. The figures for the Maison d'Accouchements (Paris) and Hospital of St. Catherine (Milan) approximated 44 and 31.8 per 1000 live births respectively. During the period 1880-1900 there was a general decline in maternal mortality in a number of countries in Europe. The decline was steep in some countries such as Belgium and Sweden, and slight in others such as England and Wales²⁴.

When addressing the Royal College of Physicians in London in 1944, Sir Winston Churchill remarked that "The longer you look back the further you can look forward". No branch in medicine can claim a longer history than the art of midwifery. Until fifty years ago pregnancy and labour carried a significant risk of death for the mother. The primary concern for all health professionals was the high maternal mortality. This was reduced before and after the second world war with the introduction of antimicrobials and freer access to blood transfusion. Prior to this a high fetal/neonatal wastage was acceptable. After the risks to the mother from pregnancy were minimised, then attention shifted to the perinatal mortality until this too was significantly reduced. *Pari passu* with developments in medical care, general improvements in the social conditions of the population have contributed towards the decline in obstetric mortality and morbidity. Nowadays the attention during pregnancy is towards the psychosocial aspects of labour. Mothers, having been released from the overwhelming fear of a possible death for themselves and their babies want to enjoy the experience of pregnancy and labour. This attitude should be encouraged, but not at the expense of the progress obtained in this century. The lessons learned from the past must not be forgotten.

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17. Malta Govt. Gaz. op. cit. note 15 above. In Gozo during 1895, there were a total of 766 livebirths and 11 stillbirths. The birth rate was 40.0 per 1000 population. The corresponding figure for Malta were 5976 livebirths and 167 stillbirths. The birth rate stood at 40.4 per 1000 population. There were a total of 1556 infant deaths reported from the Maltese Islands. 'Afflictions consequent on Parturition' accounted for 159 deaths in Malta and 47 deaths in Gozo. Tetanus neonatorum accounted for 34 deaths in Gozo and 44 deaths in Malta.
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