

Traditional counter-stimulation practices in a Central Mediterranean Island population

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A review of the medical folklore of the Maltese Islands identifies the use of counter-irritation practices dating to the prehistoric period. These practices are very much reminiscent of those in contemporary Traditional Chinese Medicine. Because of the distances involved, it is unlikely that direct cultural intercourse took place and it is suggested that these similarities were the result of isolated parallel development of ideas based on observation and experimentation

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INTRODUCTION

The Maltese Islands are a small group of very small islands sited in the Central Mediterranean just 93 kilometres south of Sicily and 290km from the Northern African mainland. Gibraltar is 1836km to the west and Alexandria is 1519km to the east. This central position within the Mediterranean Sea made the islands an important meeting place for the various Mediterranean cultures throughout the ages, merging and amalgamating European traditions with cultures derived from the Eastern Mediterranean lands and the Maghreb region of North Africa. The presence of man on the Maltese Islands has been archaeologically documented since the Palaeolithic or Old Stone Age Period dating to before 15,000 years ago [or BP – Before present]. However, evidence of a definite cultural presence on the islands potentially affecting medical practice can be dated to the Ghar Dalam Phase of the Neolithic Period, about 7,000 BP. Much of the evidence relating to medical interventions comes from the archaeological skeletal record, where evidence of surgical interventions were carried out to correct fractures and to expel adverse humours through trephining.¹ One statuette excavated from one of the Copper Age Temple complexes dating to about 6,000-4,500 BP suggests that counter-stimulation of some form or other may have been applied in the management of pregnancy conditions. Counter-stimulation continued to be used as a form of medical therapy right through the millennia up to the beginning of the twentieth century. Counter-stimulation or counter-irritation has been defined by the US Food and Drug Administration as ‘An externally applied substance that causes irritation or mild inflammation of the skin for the purpose of relieving pain in muscles, joints and viscera

distal to the site of application. They differ from the anaesthetics, analgesics, and antipruritic agents, however, in that the pain relief they produce results from stimulation—rather than depression—of the cutaneous sensory receptors and occurs in structures of the body other than the skin areas to which they are applied as for example, in joints, muscles, tendons and certain viscera.’² The irritation can be produced by a variety of methods, e.g. cupping, acupuncture, heat applications, and the application of cataplasms, poultices and sinapisms.

PREHISTORIC EVIDENCE

The medical practices prevalent within the Maltese population during the prehistoric phase of history (i.e. before written records were kept) can only be gleaned by reviewing the archaeological record and offering interpretations for the artefacts. A clay statuette (Figure 1), excavated from Tarxien Temples complex dated to 4,500-5,150 BP, depicts a definitely pregnant form with clearly defined external genitalia to which the figure is pointing to and clearly defined incisions on the back, probably representing the lunar months of pregnancy. Two other similar figures were excavated from the Mnajdra Temple complex dated 5,600-5,800 BP, and the Hal Saflieni Hypogeum complex dated 5,000-5,300 BP. The Tarxien Temple model is particularly different from the other two statuettes in that it has a number of shell fragments obviously purposefully impacted in various parts of the body within the clay before firing. It can be suggested that this model actually indicates pressure points where counter-stimulation may be applied during pregnancy.³ The various bone implements excavated from various Temple Period sites in Malta may themselves have been also used to supplement the counter-

stimulation procedure. These are similar to the sharp-ended bone needles and bian blades unearthed from the Neolithic archaeological sites in China. The small earthenware cup measuring 7.3 cm high excavated from Hal Saflieni Hypogeum may have possibly been used as a cupping vessel (Figure 2).⁴

Counter-stimulation in the form of cupping, where cups are applied to the skin under suction, was used during the prehistoric

period in Ancient Egypt. The Ebers Papyrus dated to about 3,550 BP refers to cupping for removing foreign noxious matter from the body. Archaeological depictions of cupping utensils have been described in the ancient medical instruments drawing on the wall of the temple Kom Ombo in Egypt.⁵ The practice remained widespread throughout the Mediterranean region in the subsequent centuries.⁶

Figure 1 Clay statuette from Tarxien Temples, 4,500-5,100 BP



Figure 2 Bone implements including needles and earthenware cup from Temple Period sites in Malta



EVIDENCE FROM THE CLASSICAL PERIOD

Archaeological evidence of cupping [*fintusi* in the Maltese vernacular] probably combined with venesection is seen on one of the tomb slabs at the necropolis sited outside the capital city of the island of Malta in use during the Classical period 1,200-1,700 BP (Figure 3). The tomb slab served the purpose of sealing up one of the tombs in the catacomb complex. The slab depicts a series of fourteen surgical instruments in common use during the Roman

Period. The tool series includes two cups known to have been used to assist the process of venesection.⁷ Similar-shaped cups have been depicted on other tomb slabs and found in various archaeological sites in Europe. The practice of cupping with or without associated venesection remained an integral part of Maltese traditional practice right up to the twentieth century.

Figure 3 Tomb slab depicting surgical instruments from Malta [bleeding cups shown one above the other on the right] and 2nd century cupping kit excavated from doctor's grave at Bingen am Rhein in Germany



Cupping, combined with venesection, became the mainstay management to restore health equilibrium during the Classical Period between the 8th century BCE (Before Common Era) and the 6th century AD (Anno Domini or ACE = After Common Era). In European culture, the rationalization of medical practice was developed by the Greek physician Galen of Pergamum [born 129; died 216 AD]. He adopted the writings and conceptions of the Greek philosophers Plato and Aristotle as well as the writing of the physician Hippocrates. Galen proposed that human health required equilibrium between four main bodily fluids or humours – blood, yellow bile, black bile, and phlegm. Disease was caused by an imbalance of these humours and treatment regimens were directed to restore this balance. Treatment regimens aiming to restore the humours were varied but commonly included venesection, cupping and purging with emetics or laxatives.

THE MEDIEVAL AND EARLY MODERN PERIOD

Galen's concepts were to dominate medical theory and practice in Europe from the Middle Ages right through to the 18th century. Cupping or the application of *fintusi* involved the application of vacuumed glass cups in specific regions over the body, usually but not restricted to the back. In traditional Maltese practice, cupping was generally used to alleviate muscular pains, lumbago and sciatica, fever, mental disease and for a number of other non-specific illnesses.⁷ The methodology in general use in Malta involved a heat source which was usually a small piece of cloth lightly soaked in spirit or a small piece of candle placed on a coin. After setting up and lighting the heat source, a cup in the form of a normal table tumble or a specifically designed cup was

applied over the heat source. The burning process removed the oxygen contained in the cup extinguishing the heat source and causing a vacuum effect.⁸ The mechanism of action of cupping, especially in regard to the relief of pain, is difficult to explain but may be assumed to work by acting as a method of counter-stimulation based on distraction in one location with the goal of lessening discomfort and/or inflammation in another.

Venesection also remained an important management option in a large variety of diseases right up to the beginning of the 20th century, and was carried out by direct lancing of a vein, or by using scarificators that made multiple incisions on the skin to cause multiple bleeding points, or by the application of leeches.⁹ Venesection in small repeated quantities was regularly used in the management of fevers; while in the presence of wounds, the procedure was believed to reduce the inflammatory reaction by helping the absorption of extravasated blood from the tissues. The procedure was also used to prevent the development of eclampsia in pregnancy, cerebral stroke, and in the management of severe headache, pulmonary oedema, mental disease and gastric symptomatology. Venesection was generally performed on the jugular or brachial veins, rarely from the veins of the leg. It was sometimes combined with cupping to help extract a larger volume of blood. Leeches were also applied to reduce superficial inflammation at wound sites especially after plastic surgery such as rhinoplasty.¹⁰ This concept has been re-adopted in modern medicine using the anticoagulant injected by the leech to help with improving the circulation after plastic surgery.¹¹

A prescription from 16th century Malta clearly demonstrates the use of the various

therapeutic options to attempt cure disease by balancing the humours. A teenage child suffering from kidney problems received a “constrictive cataplasm to harden and warm ... the kidneys”. He was also prescribed *pillule foetidae* and *opopanax* to evacuate “the cold rather crude and even bilious mood”. Further prescriptions in the form of *pillulae aggregativae* were also prescribed to aggregate the humours prior to dispelling them with the assistance of the prescription *Jera pigra Galieni* which was supposed to “purge the stomach and cleanse the blood”.¹²

Another method of counter-stimulation used in traditional Maltese medicine was the application of cataplasms, poultices and sinapisms. These substances were supposed to cause irritation or mild inflammation wherever they were applied and thus act as a counter-irritant. A medical dressing made of a soft heated mass of meal or clay was spread on a cloth and applied to the skin to treat inflamed areas or improve the circulation at the site and manage local pain. They were also used to decrease swelling. The dressing was potentially made out of clay, linseed flour, bread, yeast or mustard. Charcoal was occasionally added with dressing made using clay, linseed flour or bread.¹³ The first list of pharmacological agents mentioned in the historical record in Malta dates to 1345 when these items had a 10 percent tax imposed upon their importation. The 19 products listed in the *Capitula Sagati* of 1345 included mainly items of botanical origin but included *bolu* (medicinal clay) imported for medicinal use.¹⁴

The 16th century prescriptions from Malta clearly demonstrate the use of the various therapeutic cataplasms used to manage cases of trauma. One case had a cataplasm of *quinque farinarum* applied, while the patient further had two lotions of *fusco* and

Aegyptiaco applied to his wounds. He also received oil and honeyed extracts of oil of roses that were attributed with sedative properties. A second case involving trauma was prescribed an *unguenti digestive* made from turpentine, basil, aloe, tincture and eggs applied to an open wound.¹² These methods continued to be used in Malta right through to the 20th century.¹³

CONCLUSION

The application of counter-stimulation techniques in this Central Mediterranean relatively isolated community, appears to emulate the physical methods used in modern Traditional Chinese Medicine. The long-distance separation from China [China to Malta is 7,775 km to the east] makes it highly unlikely that any direct cultural intercourse took place between the two populations during the prehistoric or classical periods. In later centuries, indirect contact may have helped introduce the methods to the European region. However, it is more likely that the similarities reflect parallel cultural development in isolation without the need for direct contact between the cultures. This isolated parallel development of ideas is most likely to occur in the promotion of medical cultural concepts that are based on observation and experimentation.

The progress in medical knowledge, especially that related to the pathophysiology of disease and the development of a wide array of pharmacological armamentarium has, in the western world, relegated all forms of traditional medicine to the ‘thrash heap’. Their mode of action, if any, is not understood and, therefore, they are deemed ‘unworthy’ to be investigated using the standard rigors of clinical and scientific research. Any attempt to investigate these physical methods is often

not taken seriously and any results from animal and clinical studies are generally ignored.

With the increasing costs associated with medical care, especially in communities with an aging population, it becomes imperative that cheaper forms of sustainable medical management be investigated and, if proved efficacious, adopted for general use. These methods do appear to have a general effect on the physiology of the individual. To cite one example from studies in an animal model involving Sprague–Dawley and Wistar rat breeds, cognitive function in vascular dementia was improved through the use of acupuncture possibly by effects of

antioxidative stress reactions, anti-apoptosis and metabolism enhancement.¹⁵ The time is ripe to put aside preconceived prejudices and adopt an integrative outlook towards clinical research and practice. Western doctors are ready to accept the concept of investigating and using tibial nerve stimulation in the management of intractable urgency incontinence, but would turn a deaf ear to stimulation of lower limb peripheral somatic nerves using acupuncture.¹⁶ In the words of Isaac Asimov: 'Your assumptions are your windows on the world. Scrub them off every once in a while, or the light won't come in'.

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