HISTORY OF MEDICINE

The ancient use of faïence in paediatric illness

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We examine the treatment of urinary incontinence in Ancient Egypt with faïence in the light of current concerns regarding the treatment of dysfunctional elimination in children with milk of magnesia.

The origins of medical science in Africa and their influence on Western medicine are attested to by surviving documents from the XVIII Dynasty of the New Kingdom period of Pharaonic Egypt. One such document is the Ebers Papyrus, an ancient medical treatise containing 108 columns of text, that represents the then current and ancient medical knowledge in Egypt from about 1536 BC, during the reign of Amenhotep I. Its translation[1] provides insight into the art and science of the early practice of historical medicine – some of which still applies to modern medical practice.

One ancient practice of interest to the modern practising physician can be found in Rubric #273 (Column 49, Line 21) of the Ebers Papyrus, that involves the treatment of bed-wetting or urinary incontinence in a child. '*Do this for a child suffering from bed-wetting*: Boil faïence beads until they form a pellet; if he be an older child, he should swallow it in a gulp, [but] if he be in swaddling clothes, one should rub [it] together for him in the milk, just as it flows forth from his nurse for four days.'[2]

Ancient Egyptian faïence (or *tjehnet*) was one of the first artificial substances created by man (Figs 1 and 2). Used mainly as jewellery, this by-product of bronze-age technology was first made about 5 500 years ago. Faïence items are symbolic of life and rebirth, and many beautiful examples have been found in burial chambers dating back to the pre-dynastic age of Pharaonic Egypt.[3] Faïence is a non-clay ceramic material that has a vitrified glaze of various colors, usually blue and green. It is not pottery or glass. The most common faïence beads were made of steatite, or soapstone, that was heated. Steatite is a soft metamorphic mineral made of talc and magnesium, and it is the magnesium released from the faïence on boiling that provides its medicinal value.

Fig. 1. Imhotep's faïence tile mosaic was discovered in the Step Pyramid at Saggara, the tomb of Djoser. Djoser is also called by his Horus name, Netjer-ikhet, 'the divine of body'. Djoser was the 2nd Pharaoh of the 3rd dynasty of the Old Kingdom of Egypt, and ruled circa 2668 - 2649 BC. The chief physician of Egypt at the time and personal physician of Djoser was Hesy-Ra, a gastro-enterologist of his day, who would have used faïence as described in the Ebers Papyrus. The invention of soapstone tile faïence is attributed to Imhotep, the great sage, architect and physician of Egypt. He incorporated 36 000 such faïence tiles in the decoration of the tomb, arranging them in a pattern similar to the faïence beads found in Egyptian jewellery placed in pre-dynastic burials. Examples of these tiles are housed at the British Museum in Room 64: Early Egypt (EA66830).

Fig. 2. A string of Ancient Egyptian faïence beads.

The most common causes of dysfunctional elimination in children include constipation, bladder instability and infrequent voiding, with constipation and faecal retention representing 50% of cases.[4]

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Functional constipation is usually associated with dehydration or issues of retention around toilet training in young children. It is not unusual for a disturbance in bowel movements to affect lower urinary tract function, since the bladder and recto-sigmoid colon are anatomical neighbours and their innervations share a common circuitry.[5] Functional constipation is sometimes overlooked in the differential diagnosis of urinary incontinence in the child. Functional constipation in a child is associated with urinary tract infections in nearly 50% of cases,[6] which generates visits to the medical provider. In the ancient world, any infection – especially in children – was particularly feared.

The treatment of choice for functional constipation with faecal retention in children is hydration and laxatives such as milk of magnesia (which chemically is magnesium hydroxide) at 1 - 2 ml/kg/day.[7] The mechanisms of action of milk of magnesia include hydroxide ions interacting with the hydrogen ions in stomach acid to produce water, and an osmotic shift of water into the bowel caused by the poorly absorbed magnesium, both of which soften faecal material and increase faecal volume to stimulate its elimination. A magnesium solution created by boiled faïence beads would have had a similar mechanism of action and be just as effective – a testament in the ever-changing landscape of modern medicine that some medical truths withstand the test of time.

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GOOSE HAIKUS

Three geese in a tree
Making a ghastly racket
Owl stares up darkly.

Suddenly owl swoops
On silent gossamer wings
Geese could not care less.

Maurice Kibel Children's poems