

The Use of Leeches in Medicine

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A Leech is any parasite annelid of the class Hirudinea. While leeches can be harmful some have been used medically in the past. Infestation by leeches (hirudiasis) may be external or internal.

In this sketch I have attempted to describe the use of leeches in the past, repatriating from Middle Ages till mid 19th century.

Since the age of Greece and Roman times, leeches have been known for their blood sucking ability. In fact during the Middle Ages of Europe up to the mid-19th century they were used extensively for medicinal purposes in countries including Malta and Gozo, Sicily, Italy, Tunis, France, Holland, Egypt and other countries. It is difficult for us today to understand the strong beliefs of physicians, surgeons and pharmacists in bygone times regarding the supposed potency and beneficial effect of these ugly creatures. In certain cases it was believed that they could indirectly help to preserve the well being of the patient.

About 250 species of leeches are known to exist worldwide. They are parasitic ugly worm like creatures. The leech has a round mouth that also functions as a sucker on the host. However it has another sucker at the end of its body. Most of the suckers used on humans in medicine were a few inches long. However in some damp murky waters in parts of the Amazon, the Congo, Tanzania, Peru, Nigeria etc., leeches can range in size from 6mm up to 30cm.

A leech feeds by attaching itself to the host using its suckers. One of these suckers surrounds the leech's mouth which contains three sets of jaws of fine minute conical teeth that bites into the hosts' flesh, making a Y shaped incision. The host may be human or animal. As the leech begins to feed, it releases some chemicals in its saliva that dilutes the blood vessels and thins the blood. An enzyme secreted by the leech keeps blood from coagulating as it feeds.

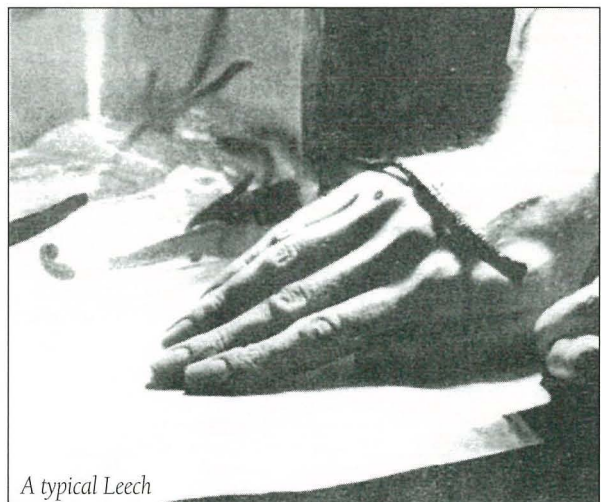
Wounds produced when blood-sucking leeches attach to humans will bleed for a while after the leech is removed or drops. A slight to an intense itching sensation may result, and without proper care these sites may become infected especially in warm weather. Infections were fairly common in past times until the sores healed.

At this point a brief reference to the great researcher Louis Pasteur is opportune. His achievements were not related to the use of leeches but he expressed his opinion that he was not an enthusiast on their use as quite often they did more harm than

good. Dr Pasteur had broken ground by his indisputable proofs that microbes were responsible for the terrible epidemics which brought about a variety of infections and in which millions of lives (not related to the infections from leeches) and an untold number of livestock were lost in Europe and Africa. His germ theory of disease was established. Dr Robert Koch the eminent bacteriologist of his times had worked out a set of rules verifying that a particular microbe was the culprit in a given infection. Between them and with weapons newly forged, Pasteur and Koch were instrumental in routing a number of deadly infections which included: rabies, anthrax, fowl cholera, silkworm disease etc.

For centuries leeches were used extensively in medical practice, partly because it was then thought that certain diseases were the result of 'imbalances' in the body that could be stabilized or benefited when blood was released. For example they were used in cases of high blood pressure. They were attached to the veins at the temples to treat serious headaches or trigeminal neuralgia. At times as many as 20 leeches were applied on the same patient to relieve pain caused by swelling.

For many physicians of those times a leech was considered as a sort of genre- an essence in itself which helped man when conditions looked bleak or distressful. Dr. Jean Paul Pergaud had referred to it (1896) in "Lieux de mémoire as La chronique sombre du réalisme populaire".



A typical Leech

Medicinal leeches which were used in Malta and Gozo (imported from abroad) during the Knights of St. John's period and later, usually had a midline row of orange and light spots along the edges and an orange brown underside.

Diseases that strangely enough were sometimes treated with leeches included gout, skin infections, certain mental conditions and whooping cough.

During the period of the Knights of St. John, the leeches were mostly applied by the barber surgeon under the supervision of doctors. Among various other things and administrative procedures, the 1725 regulations of the main hospital - the Sacra Infermerija included leech therapy and defined the job description of the barber surgeon or phlebotomist which included the application of leeches.

Another aspect not exactly related to leeches, is that vinegar was sometimes used with a view to get rid of certain germs (?) and lessen infections.

The leading continental Schools of Medicine and Surgery, the Italian (Salerno, Florence, Pisa and Bologna) and the French (Montpellier, Aux-en-Provence and Paris) both advocated the use of leeches over a long period of years.

One of the eminent doctors (outside Malta) was the Frenchman Ambrosio Pare (b. 1510, d. 1590). He was referred to as the father of surgery. Among other uses he treated poisonous snake bites with leeches.

No wonder that Maltese senior physicians of those times, who were trained mostly in France and Italy and sometimes at Palermo, were influenced by the French and Italian Schools. The famous Maltese surgeon Michelangelo Grima who died in 1796 and other doctors at times also made use of leeches for various conditions as they were considered to somehow help or preserve the life stream. Among others who used leeches were Francesco Saverio Rossignaud, Nerik Xerri, Giovanni Bruno, Daniel Mignard, Vincenzo Abela, Frangisk Azzopardi, Matteo Peruzzi and Azzo Tazzoli.

There were indications that even before the Knights of St. John arrived, leeches were already in use to some extent. In a lecture (1961) Prof. Joseph Galea (C.G.M.O.) about "Some Medical Practices in the 16th -19th centuries", he had referred among various aspects to the use of leeches. He had found a brief reference to Dr. Bartolomeo De Ansaldo, Dr. Bernardo De Munda and Dr. Lisio Prasca who had requested a quantity of leeches because these had run out of stock. Due to rough wintry weather, boats had not been plying between Malta and Sicily.

Leeches reached their height of medicinal use in various countries including Malta and Gozo from the mid- 1700's up to the mid-1800's. Leech therapy was used with limited degree of success to relieve pain and inflammation, to lessen high blood pressure and sometimes leg ulcers. Laboratory tests have established that leech saliva contains some analgesic, astringent, anaesthetic and histamine-like elements.

One can imagine the discomfort and psychological stress gravely ill or weak patients, including children faced on seeing

these twisted creeps on their bodies sucking their blood. Sensitive patients must have faced very difficult times indeed. Furthermore there is no way of telling whether these fared better or worse afterwards.

Therapeutic leeches belong to one of two species: *Hirudo Michaelsoni* or *Hirudo Medicinalis*. Of course only leeches that have been raised in the laboratory under sterile conditions are used nowadays obviously to protect patients from infections.

With the introduction of new medicines and advances in medical practices, its uses diminished after the middle of the 19th century. However at present leeches are still occasionally used in neurosurgery in America, in order to reduce the damage that small blood clots can cause and to reduce blood circulation to grafted or severely injured tissues.

In the mid-nineteenth century a very large number of leeches were still being used in local hospitals. In 1840, the Civil hospitals in Malta and Gozo were using approximately 3,500 per month – indeed a large number. In 1851, the administrative officer of Santo Spirito Hospital with about 28 inmates was requesting 300 leeches a month and at one point this was queried.

The price in 1840, was six to ten shillings sterling per hundred leeches which had to be clean and in perfect health. A pharmacist had to check them. These were generally imported from Tunis and Bone and at times from Sicily. The importer/contractor who supplied the Charitable institutions (this name was changed later to Medical and Health Department) bound himself to supply a large quantity for a whole year in stages and to keep in hand a stock of 4,000 leeches, subject to a penalty of £42 (Sterling) – a large sum for those years, in case of non-compliance. This shows the importance attached to leeches.

To digress a little from the past to recent times, in some countries such as India, Egypt, Morocco, Burma and Nigeria there was up to some years ago, a type of leech which presented a serious problem, because it survived by sucking blood from an animal host, such as cows, pigs, goats, chickens and certain fish.

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