

ANT MANDIBLES AS STAPLES IN THE ERA OF THE GREEK PATRIOT IOANNIS MAKRIYANNIS (1797-1864)

PRIMJENA MRAVLJIH ČELJUSTI KAO KIRURŠKIH KOPČI U DOBA GRČKOG DOMOLJUBA YANNISA MAKRIYANNISA (1797.–1864.)

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SUMMARY

The use of ant mandibles as surgical clips was documented by the ancient Indian physicians Susruta and Charaka as early as 1000 BC and continued in some world areas into the early 1900s. According to the memoirs of the Greek revolutionary general Ioannis Makriyannis, this technique was also applied in the battlefields of the Greek Revolution for Independence between 1821 and 1832.

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INTRODUCTION

The practice to use ant mandibles as suture materials was first described by the Indian physicians Susruta (9th century BC) and Charaka (4th century BC). In the famous treatise *Susruta Samhita* we read: “Large black ants should be applied to the margins of the wound and their bodies then severed from their heads, after these have firmly bitten the part with their jaws”¹ (Fig. 1) [1].

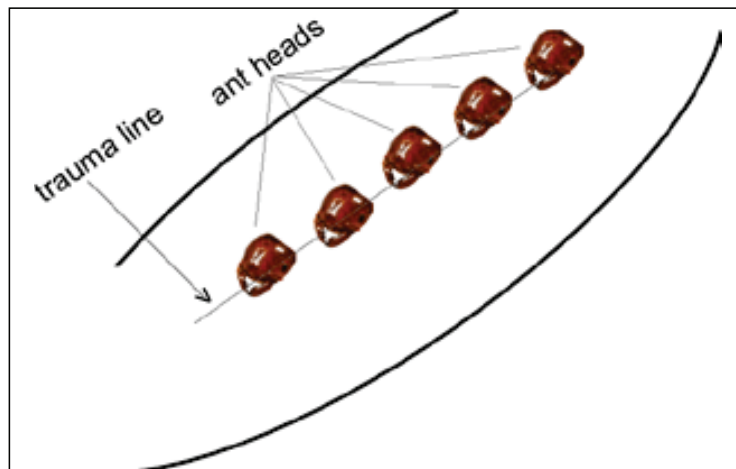


Figure 1 - The ant mandible technique. Personal drawing of Dr M. Papakiritsis
Slika 1. Tehnika suturacije mravljim čeljustima. Skica dr. M. Papakiritsisa.

Forerunner of modern stapling, this curious practice of Hindu ancient surgery was reported in successive translations from Sanskrit to Greek, then from Greek to Arab by the famous Arab surgeon Abulcasis (or Albucasis) (936-1013), from Arab to Latin by the scholar Gerard of Cremona (1114-1187), and finally in the translation of Abulcasis's work *Albucasis de chirurgia Arabice et Latine* by Johannis Channing in 1778 [2].

The ant mandible method, as described by Abulcasis, was applied only in desperate situations. At the end of the 17th century, the method was also cited in the work of the Italian surgeon and anatomist Girolamo Fabrizi d'Acquapendente (1537-1619), but it was soon renounced by the author.

In the 19th century, accounts by European travellers in the Mediterranean and African countries also refer to the procedure as practiced by the locals. Various ant species served as sutures in different parts of the world, including *Atta cephalotes*, *Eciton burchelli*, and *Oecophylla smaragdina* [3]. It is during that period, that we see the ant mandible technique applied in the battlefield of Greek Revolution for Independence, between 1821 and 1832, as

it was mentioned in the *Memoirs* of the Greek revolutionary general Ioannis Makriyannis (Fig. 2).

WHO WAS IOANNIS MAKRIYANNIS?

Ioannis Makriyannis was born in a small village called Avoriti of Lidoriki in eastern Greece in January 1797. Greece was then under the Ottoman Occupation. His family name was Triantafyllou and the name Makriyannis (Long John) was a nickname that he acquired because of his tall figure; *ma-kry* in Greek means tall and *yannis* is a diminutive of his first name Ioannis (John).



Figure 2 - Greek revolutionary general Ioannis Makriyannis (1797-1864)

Slika 2. General Grčke revolucije Ioannis Makriyannis (1797.-1864.)

His widowed mother, Vasiliki, took him to Livadia after his father's death, and he remained there until the age of 14. In 1811, he moved to Arta (Epirus region), where he began petty trading, prospered, and built himself a house. In 1820, he joined *Filiki Etaireia* (Society of Friends), a secret organisation that was preparing anti-Ottoman revolution and had chapters in major cities all over Europe.

Makriyannis was one of the leading combatants in the war of independence, distinguishing himself in several battles, including Peta, Tzoumerka, Athens, Acropolis, and Serpetze.

After the Acropolis was surrendered by the Ottomans in 1822, he was appointed Supervisor of Public Order in the city of Athens [4].

In 1825, he married Catherine Skouzes, the daughter of a wealthy and prominent Athenian Georgandas Scouzes, and they had twelve children [5].

Makriyannis received Otto I (1815-1867) King of Greece with great enthusiasm that later faded into resentment because of Otto's way of governing. He fought against the King and played an important part in political action that led to the first Greek constitution on 3 September 1843. Elected as representative of Athens to the National Assembly of 1864, he died on 27 April of the same year [5].

His extraordinary *Memoirs* (*Apomnimoneumata*) were much appreciated in the 20th century literary circles and among intellectuals Greek ethnic identity His *Memoirs* are considered a treasure of the Greek language, and the Nobel laureate, Greek poet Georgios Seferis (1900-1971) said the following: "Makriyannis's writings are not a simple biography, but present the belief and the consciousness of a nation - a valuable testament" [6].

As a piece of curiosity, Makriyannis was illiterate until the age of 33, when he decided to learn how to write so that he could compose his autobiography, which covers his life until 1850. The manuscript was discovered and published by the Greek writer Ioannis Vlachogiannis (1867-1954) in 1907.

ANT MANDIBLE METHOD IN MAKRIYANNIS' MEMOIRS

The description of the "ant staple" technique in this paper has been taken from the 1973 edition of Makriyannis's *Memoirs* [7].

According to Makriyannis, during the battle of Patratziki a Greek soldier named Mitros Katharios was wounded by a Turk in the abdomen with

a knife, but was saved by Makriyannis. The soldiers left the knife in his abdomen until the physician took it out and used ant mandibles as staples to close the margins of the wound. The recovery lasted a year, with signs of contamination, judging by Makriyannis's description that the wound exuded *manure* (debris) [8]. What he seems to describe, however, is a fistula or a break in the wound.

The editor's comment to the *Memoirs* 1973 edition confirms that physicians in the years of the Greek Revolution put live ants to bite the margins of the trauma and then cut the body off leaving only the mandibles to act as strong staples. Most of these battlefield physicians were untrained, drawing their knowledge of medical or surgical practice from their fathers, as in the case of the Giatrakos (meaning doctor in Greek) family in Laconia. Some of the leaders of the Greek Revolution such as Kolokotronis, Petrombeis, or Deligiannis also had a basic empirical medical knowledge[8].

CONCLUSION

In terms of the history of medicine, the value of Makriyannis's *Memoirs* is that it brings the only historical reference to the ant mandible stapling practice in Greece and further research might answer questions as to how effective and common it was.

Makriyannis text is the only reference that we have till now concerning ant mandible as staples in 19th century Greece and no other information is provided concerning their effectiveness.

We have decided to mention some sentences on Makriyannis life than to just insert the suture technique that was practicing during the Greek revolution for independence, believing that it will be interesting for the readers.

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SAŽETAK

Još 1000 g. pr. n. e. indijski liječnici Sušruta i Čaraka spominju primjenu mravljih čeljusti kao kirurških kopči, koja se nastavila u nekim dijelovima svijeta sve do prve polovice XIX. stoljeća. Prema zapisima iz sjećanja grčkog revolucionara, generala Yannisa Makriyannisa, ova se tehnika primjenjivala i na bojištima u Grčkoj tijekom Revolucije za neovisnost od 1821. do 1832.

Ključne riječi: *mravlje čeljusti, kopče, Yannis Makriyannis, Grčka revolucija za neovisnost*