

## Georges-Paul Dieulafoy (1839-1911) and the first description of “exulceratio simplex”

Marianna Karamanou<sup>a</sup>, Aliko Fiska<sup>b</sup>, Thespis Demetriou<sup>b</sup>, George Androutsos<sup>a</sup>

<sup>a</sup>Medical School, University of Athens, Greece, <sup>b</sup>Medical School, Democritus University of Thrace, Greece

### Abstract

Professor Georges Dieulafoy is considered to be an outstanding clinician who played a leading role in medicine during the 19th century. He invented the well-known Dieulafoy aspirator, he described a triad for the diagnosis of acute appendicitis and he tried to bridge the gap between internal medicine and surgery. This article presents in details the first description of “exulceratio simplex” that bears his name.

**Keywords** Georges Dieulafoy, eminent clinician, exulceratio simplex

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### Introduction

Dieulafoy’s lesion, typically located within 6cm of the gastroesophageal junction on the lesser curvature, is an uncommon cause of recurrent, often massive gastrointestinal bleeding. The pathogenesis is believed to be the abnormal presence of large-caliber arteries in the submucosa that subsequently cause thinning of the overlying mucosa which then leads to erosion and exposure of the vessel wall to the lumen and eventual intraluminal hemorrhage [1].

The lesion was described clinically, pathologically, pathophysiology, and therapeutically in a small series, in 1898 by the French physician Georges Dieulafoy who named it “exulceratio simplex” believing that it was the first stage of a gastric ulcer, the progression of which was interrupted by the occurrence of bleeding [2].

### Dieulafoy’s life and career

Georges Dieulafoy (Fig. 1) was born in Toulouse, on November 18, 1839, where he commenced his medical studies. In 1863, during the third year in Toulouse’s medical school, he went to Paris, to Hôtel-Dieu hospital to attend the clinical department

of Professor Armand Trousseau (1801-1867) [3]. Dieulafoy became the spiritual son of Trousseau and their friendship ended with the untimely death of the latter (Fig. 2). The two years that he spent in the surgical department determined his medical-surgical thought on diseases at a time when physicians



**Figure 1** Professor Georges Dieulafoy (1839-1911)

<sup>a</sup>History of Medicine Department, Medical School, University of Athens, Greece (Marianna Karamanou, George Androutsos);

<sup>b</sup>Laboratory of Anatomy, Medical School, Democritus University of Thrace, Greece (Aliko Fiska, Thespis Demetriou)

Correspondence to: Marianna Karamanou, 4 str. Themidos, Kifissia, 14564 Athens, Greece; Tel.: +306973606804; Fax: +302108235710, e-mail: mariannakaramanou@yahoo.com

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**Figure 2** Professor Armand Trousseau on his deathbed. Drawing performed by Dieulafoy on June 23, 1867

and surgeons were very distant from each other. During the Franco-Prussian War in 1870, he led an ambulance service at the Holy Trinity church of Paris [4]. In 1872 he married his cousin Claire Bessagnet. They remained childless.

He became chief of the medical department at Tenon hospital in 1879, at St. Antoine in 1881 and at Necker in 1886. In 1887 he was appointed Professor of Internal Pathology in the place of Professor Alfred Hardy (1811-1893) and in 1896 he succeeded Germain Sée (1818-1896) as Professor of Clinical Medicine at the famous Hôtel-Dieu, where he remained until his retirement in 1910 (Fig. 3) [5]. Afterwards, he became chief physician at “Léon Bourgeois” dispensary until his death. He

was elected member of the French Academy of Medicine in 1890 and president in 1910 [6].

Dieulafoy was a distinguished practitioner, an alert and intelligent physician and an excellent speaker. His fame was such that each Saturday, the Trousseau Amphitheater at Hôtel-Dieu was completely filled long before the beginning of his histology lectures. His audience: medical students, metropolitan physicians, men of letters, society ladies. Dieulafoy presented his subject with an art which bewitched, he spoke with animation, warmth and enthusiasm by showing off a pleasing literary style [7].

He died on August 16, 1911 after postoperative complications and was buried in Montmartre cemetery [2].

### His scientific work

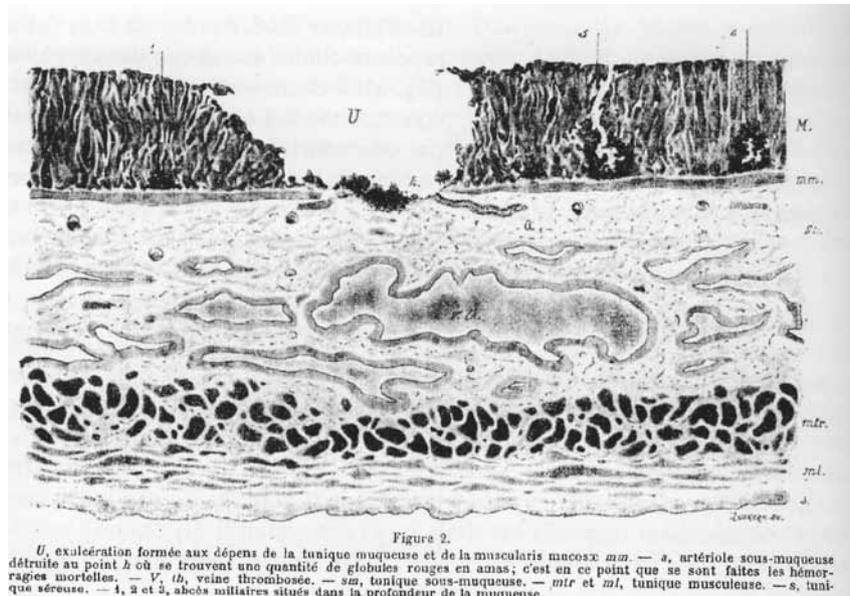
Dieulafoy brought much more to medicine than only the description of a lesion. In 1869, he defended his thesis entitled *La mort subite dans la fièvre typhoïde* (Sudden death in typhoid fever) [8]. During this period he developed an ingenious system of aspiration that took his name (Dieulafoy’s aspirator). Under the title of “Pneumatic Aspiration, a medico-chirurgical method of diagnosis and treatment,” Dieulafoy presented fifty cases of hyarthrosis and some cases of pleurisy successfully treated by his method [9]. It is impressive that his vacuum was manufactured until 1940.

In 1872, he presented his work *De la contagion* [10] and in 1875 his second thesis entitled *Les progrès réalisés par la physiologie expérimentale dans la connaissance des maladies du système nerveux*, (The progress of experimental physiology in understanding the diseases of nervous system) [11]. In 1880 he published his landmark work *Manual of Internal Pathology*, published in sixteen editions between 1880 and 1911 [12].

Dieulafoy has been recognized as an innovative investigator



**Figure 3** The department of Professor Dieulafoy in Hôtel-Dieu Hospital, Paris, 1903.



**Figure 4** Original section from Dieulafoy's treatise *Exulceratio simplex* showing the lesion

and a keen observer who did seminal work on tuberculosis [13], typhoid, Bright's disease and appendicitis. Among his contributions were his erosion-an erosion or ulcer complicating pneumonia and causing upper gastrointestinal bleeding, his pancreatic crisis-symptoms of acute abdomen at the onset of hemorrhagic pancreatitis and his famous lesion.

Furthermore he was one of the promoters of appendicitis treatment and he described his famous triad; a hypersensitivity of the skin, tenderness and muscular contraction at Mc Burney's point in acute appendicitis.

He also coined the word "pollakiuria" to describe frequent, urgent and painful urination [5].

### The "exulceratio simplex"

In 1894 Dr. M.T. Gallard [14] published the first three cases of gastric ulcerations responsible for fatal massive bleeding, but it was Dieulafoy who made the most accurate description and gave the name of "exulceratio simplex".

On 18<sup>th</sup> January 1898, Dieulafoy presented three of his own cases in the French Academy of Medicine and identified four further cases in other publications [15] (Fig. 4). He described this lesion with great precision corresponding with superficial erosion, limited to the mucosa, centered by an arteriole that opens at its center and is responsible for massive bleeding. He mentioned that the ulceration was so superficial that in several cases it had not been seen by surgeons, even during autopsy. Dieulafoy stated: "Once the stomach opens, we could not see it because we did not know its location and it passed unnoticed... The ulceration is located towards the upper part of the stomach and the rest of the gastric mucosa is normal" [15].

Dieulafoy's communication develops a pathophysiological hypothesis as he attempts to integrate the "simplex exulceratio" among other ulcerative lesions of the stomach. It also incorporates the idea put forward by Professor Maurice Letulle (1853-1929) that ulcer is an infectious disease: "ulcer is often the remnant of an infectious disease" [16]. Dieulafoy found what he termed "miliary abscesses," which he believed perforated into the gastric lumen and exposed the normal blood vessels beneath to peptic digestion. He surmised this was the presentation of a nascent common type gastric ulcer and so coined the term "exulceratio simplex" [17].

Dieulafoy recommended, as therapeutic approach to the lesion, the surgical excision that remained valid until the introduction of endoscopy [5]. According to him an absolute indication for surgical intervention was, "if the patient vomits half a liter to a liter of blood and if hematemesis is repeated two or three times in 24 hours" [15].

### Conclusion

Dieulafoy's clinical expression "exulceratio simplex" has not changed since its first description in 1898. However, the therapeutic approach based on diagnostic and therapeutic endoscopy has completely changed the prognosis.

Today we know that "exulceratio simplex" has been reported in sites throughout the gastrointestinal tract, such as the esophagus, duodenum, colon and in rare cases it has an extra-gastrointestinal location such as the bronchi [1,18].

Georges Dieulafoy was much more than a good physician. He was a medical giant, an outstanding clinician with great experience in pathology and an interest in the etiology of disease.

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