

Jean Alfred Fournier (1832-1914): His contributions to dermatology

Nadeem Toodayan

Associate Lecturer, University of Queensland School of Medicine, Southern Clinical School, Brisbane, Australia

Corresponding author: Dr. Nadeem Toodayan, E-mail: nadeem_toodayan@hotmail.co.uk

INTRODUCTION

Historically, the interplay between dermatologists and other specialists has nowhere been more pronounced than in the field of venereology. A true sister to the art, it has accurately been remarked that *dermatology and venereology were inextricably intertwined* all throughout the nineteenth century [1]. At that time, the range of figures thus inclined were themselves a motley bunch, ranging in focus from the pure dermatologist – of which there were many – to medical polymaths like Sir Jonathan Hutchinson (1828-1913), who excelled in both dermatology and venereology, as well as in everything else he pursued. In amongst this peculiar group, we here remember Jean Alfred Fournier (1832-1914), the obligate venereologist, who, out of this innate overlap, forged a most fruitful and memorable career path. Fournier's contributions to modern dermatology are numbered but his influence on the specialty as the first ever Professor of syphilology and cutaneous diseases in Paris should not be underestimated. Written in recognition of the recently passed centennial anniversary of his death – 25th December 2014 –, this article will serve to remind readers of Fournier's legacy by reviewing some of his specific contributions to dermatology.

FOURNIER'S GANGRENE

When spoken of today, the likely vestige of Alfred Fournier's legacy most often inciting further discussion about the man, is the fulminating genital gangrene described by him in the early 1880s and commonly referred to by his name. Doubtless the most popular and widely known of the Fournier eponyms, Fournier's gangrene certainly falls within the range of skin disease,

and a brief dermatologic account of the condition will therefore serve well to reintroduce Alfred Fournier to the reader (Fig. 1).

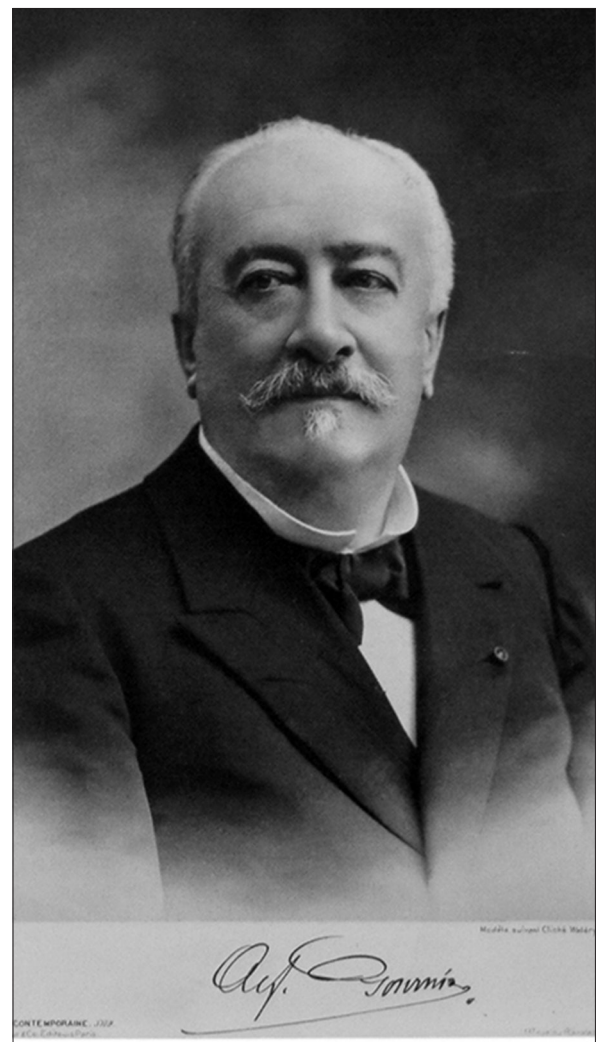


Figure 1: Professor Jean Alfred Fournier (1832-1914); the archetypal dermatovenereologist. Reproduced from an original photo-print owned by the author.

How to cite this article: Toodayan N. Jean Alfred Fournier (1832-1914): His contributions to dermatology. Our Dermatol Online. 2015;6(4):486-491.

Submission: 31.05.2015; **Acceptance:** 16.07.2015

DOI: 10.7241/ourd.20154.137

The peculiar anatomy of the human perineum means that gangrene affecting the genitalia is often a rapidly progressive and life threatening condition. Typically induced by soft tissue damage in the immunocompromised patient – diabetics and alcoholics are classical candidates – Fournier's gangrene is best described as a fulminating and polymicrobial necrotising fasciitis of the genitalia [2]. Generally speaking, it is more common in men but can occur in women and even children. Synergistic infection with aerobic and anaerobic organisms in the setting of a toxin mediated obliterative endarteritis is primarily responsible for this type of gangrene, and by spreading along the deep fascial planes, the infective cascade is rarely inhibited in its extension. Cutaneous infection precedes genital gangrene in up to 21% of cases. In these patients, poor genital hygiene, pressure sores, skin trauma from any cause, and hidradenitis suppurativa present common predisposing factors. Surgical debridement and broad spectrum antibiotics with supportive care remains the mainstay of therapy in patients with Fournier's gangrene.

The clinical picture of Fournier's gangrene has often been told by the dermatologist, not least so because many of the initial and final features of the disease are cutaneously manifested. What starts out as a severely painful erythematous swelling of the genitalia, often progresses to a less irritating and finally painless area of genital gangrene, the characteristic dark purple or black discoloration of which, is typical of gangrenous changes occurring anywhere else. Fever, malaise, lethargy, and other signs of systemic toxicity occur early on and are commonly associated features. Specific skin signs to exclude when assessing for Fournier's gangrene include palpable cutaneous crepitus, small erupting vesicles, oedema exceeding the area of erythema, induration, cyanosis, bronzing, and blistering of the skin, and dermal thrombosis [3,4]. A lack of lymphangitis in the presence of these features may also be suggestive of deeper skin infection. When in doubt of the diagnosis, certain dermatologic differentials to have in mind include severe scrotal cellulitis, ecthyma gangrenosum, vasculitis associated genital gangrene, warfarin induced skin necrosis, and genital pyoderma gangrenosum [5]. The erosive and gangrenous balanitis of Corbus [6], which is classically brought on by anaerobic organisms in the uncircumcised patient and usually limited to the glans penis only, is likewise to be distinguished from Fournier's gangrene.

'GANGRENE FOUDROYANTE DE LA VERGE'

Alfred Fournier first lectured on genital gangrene in December of 1883, at which time he focused on delineating what he called *gangrene foudroyante de la verge* – or fulminating gangrene of the penis – from what he felt were other less aggressive types of genital gangrene [7]. Having seen five such cases to date, he felt it important to delegate this type of gangrene a distinct seat in the medical nosology, and on introducing the specific terminology above mentioned – *foudroyante* – he succeeded in doing just that. Fournier noted diabetes, alcoholism, and vascular insufficiency as important constitutional predisposing factors in many instances, but these cases were to be separated from what he classed as 'fulminating' genital gangrene. He concluded his first lecture asserting that *there exists a different gangrene of the penis from the other types involving the same organ*, and presented a pointed list emphasizing its most unique characteristics: *the absence of any predetermined cause* *, *a gangrenous and sudden beginning, astonishingly rapid and always considerable extension, the frequent coexistence of purple discoloration, and finally an excessive morbidity*. The clinical features and natural history of the disease were masterly detailed in a follow up lecture given in February of 1884 [8]. Noting the disease's malignant potential, shocking speed of invasion, systemic features, and spontaneous occurrence in what were otherwise apparently healthy young males, Fournier concluded that it was likely infectious in nature. He also highlighted the strong potential for mortality in these patients.

Fournier's lectures on genital gangrene hardly occupied a significant place in his outstanding oeuvre, and his enquiries into the subject would almost have been merely a side effect of his intensive interests in venereology. That being said, there is no taking away from the influence of his lectures, as both were, in the manner of everything else he studied, role models of clinical excellence. We have from perusing them, a very high estimate of the standard quality of his daily works, and the eponym Fournier's gangrene preserves prestige in having conveyed to us, the wonderful legacy of one of France's finest clinicians.

*Improvements in our understanding of the pathophysiological processes occurring in necrotising fasciitis means that modern medicine recognizes no such thing as truly 'idiopathic' genital gangrene.

Even so, the rest of Alfred Fournier's classical clinical description remains highly accurate, and the name Fournier's gangrene is today used to refer to rapidly fulminating genital gangrene of any aetiology.

CLINICAL CONTRIBUTIONS TO DERMATOLOGY

Alfred Fournier's phenomenal clinical ability was largely built upon meticulously describing the signs and symptoms of syphilis, a disease with which his name was almost synonymous in the latter half of the nineteenth century. Starting out during his internship at the *Hôpital du Midi* in the mid-1850s, Fournier's fervour for syphilology was to prove a lifelong fixation. In 1868, he became head of the venereology service at the *Hôpital Lourcine* which he served faithfully for eight years before becoming *Chef de Service* to the famous *Hôpital Saint-Louis*, then the undisputed mecca of nineteenth century French dermatovenereology (Fig. 2). As one of Paris' foremost venereologists, Fournier's was elected to occupy the second ever professorial chair of syphilology and dermatology in France shortly after it was erected by the Paris Faculty of Medicine on the last day of 1879 [9] – the first such chair was offered to Antoine Gailleton (1829-1904) at the Faculty of Medicine of Lyon in 1877 [10]. This dual professorship, although contested by a number of his colleagues, put Fournier in the position to learn and teach dermatology at Saint-Louis.

Many of Fournier's clinical contributions to dermatology were outlined by his famous student, Ferdinand Jean Darier (1856-1938), who detailed his master's works in a reverential obituary article written for him in mid-1915 [11]. From an English translation of Darier's article [12], we know that Fournier lectured on a number of purely dermatologic subjects (herpes, urticaria, and hydroa buccalis) and that he coined the term *diabétides* – a name that would come to encompass all the cutaneous manifestations of diabetes. His descriptions of vacciniiform herpes in infants, drug eruptions due to antipyrine, fulminating gangrene of the genitalia, and recurrent buccal herpes in syphilitics were also offered as examples of his dermatologic writings. As others have suggested, Darier was apt to report that *the dermatological types which particularly attracted Fournier's attention are those which have some points of contact with syphilis*. This truism was many times amplified by Professor Louis Nékám (1868-1957), another student of Fournier's,

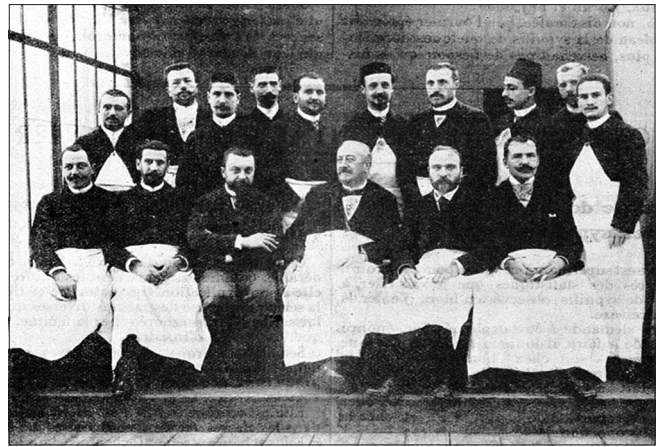


Figure 2: Alfred Fournier and colleagues in his famous dermatovenereology clinic at the *Hôpital Saint-Louis* in 1891. From the Collection *Bibliothèque interuniversitaire de Santé Médecine*.

who in September of 1935, faced members of the ninth international congress of dermatology in Budapest to make the now well-known satirical remark that Fournier classified skin diseases as *syphilitic*, *parasyphilitic*, *syphiloid* and *asyphilitic*! [13].

Dealing daily with syphilitic patients, Fournier was sure to document precisely, the many and varied syphilitic skin eruptions. This aspect of dermatology – pure dermatovenereology – was surely Fournier's forte, and Gaston Milian (1871-1945), Fournier's final chief of clinic, once recorded how *describing the cutaneous and mucous manifestations of syphilis is almost entirely his doing* [14]. In this regard, the syphilitic origin and precancerous nature of leukoplakia caught Fournier's close attention [15] and he became known for having classed this disease into a group he called the *parasyphilitic* affections [16] – the same group to which he famously designated *tabes dorsalis* and general paralysis. The cutaneous side effects of mercurial and iodide therapy likewise interested Fournier, and this author was not at all surprised to have found that Fournier had indeed written quite specifically on these topics. Along with mercurial stomatitis, specified dermatologic reactions outlined by Fournier in his lectures on mercurial therapy [17] include *hydrargyria* associated pruritus and the highly variable *desquamative polymorphous erythema* (amongst other idiosyncratic irritations). In discussing the evolving clinical features of the latter and the skin diseases with which it could be confounded – *scarlatina*, *measles*, *urticaria*, *eczema*, *erythema multiforme*, *erysipelas*, *commencing small-pox*, *exfoliating dermatitis* – Fournier demonstrates a degree of familiarity with even the asyphilitic dermatoses. His descriptions of skin reactions to iodide therapy were

just as nuanced [18], and the specific types he thus identified – namely *iodic acne*, *iodic purpura*, and other more severe *iodidides* – were very handsomely reported. In the latter class of more severe iodic skin reactions – the ‘*iodidides*’ as they were then referred to – Fournier again demonstrates considerable dermatologic skill in classifying accurately the differing forms of the disease. He listed *bullous*, *furunculo-carbuncular*, *pustulo-crustaceous*, and *mycotic* subtypes, with the comment that the resemblance between *pustulo-crustaceous* iodic eruptions and certain tertiary syphilides could fool even the most careful clinician. In their syphilitic appearance, these iodic rashes sure were to fascinate Fournier and he was apt to tell his students how they *form one of the most interesting chapters in dermatology* [19]. Even outdated – the term *iododerma* has replaced much of the above given terminology – Fournier’s work remains exemplary in its admirable degree of attention to clinical detail.

NON-CLINICAL CONTRIBUTIONS TO DERMATOLOGY

Although Fournier’s contributions to clinical dermatology were limited in scope, he certainly played more important a managerial role in the development of the specialty in France. Such was his pivotal involvement in founding the *French Society of*

Dermatology and Syphilography, which formed in June of 1889 and officially convened annual meetings in April of the following year [20]. From its very inception, Fournier contributed greatly to the society’s work, and given that his presidential term – starting in the year of his retirement in 1902 – ran for a full seven years [21], we get some idea of the high esteem in which he was held by his fellow colleagues. The same society flourishes to this very day under the name of the *French Society of Dermatology and Sexually Transmitted Diseases*, and meets annually to discuss modern advances in both the fields of dermatology and venereology.

Apart from his involvement with France’s premier dermatologic society, Fournier was also a central figure at the First World Congress of Dermatology, which was hosted by the *Hôpital Saint-Louis* in August of 1889 [22] (Fig. 3). Alfred Fournier was then at the peak of his productivity, and having penned numerous and authoritative texts on all aspects of syphilis, his works captured widespread attention from the international medical community. Of particular interest to the dermatologist is Fournier’s friendly alliance with the English medical polymath Jonathan Hutchinson (1828-1913), who was, as far the study of syphilis is concerned, Fournier’s equal in England. In 1886, Fournier honoured Hutchinson by coining the term ‘*Hutchinson’s triad*’ [23], and Hutchinson dedicated his textbook on syphilis



Figure 3: Alfred Fournier (seated centrally in front row) at the First World Congress of Dermatology in Paris, August 1889. The conference was held in Saint-Louis’ historical hospital museum and hosted some 210 dermatologists from 29 different countries. Reproduced from *Dermatology in France* (p.415) with kind permission from the editors Dr. Daniel Wallach and Dr. Gérard Tilles.

to Fournier in the following year [24]. These gestures, alongside increasing international acclaim, made Fournier all the more famous back home in Paris, and many of Fournier's students took after their master in becoming notable figures in the history of dermatology themselves. Darier has already been referred to, but other widely regarded dermatologists to come from Fournier's clinic include Sabouraud, Wickham, Brocq, and Gaucher, to name but a few.

DERMATOVENEREOLOGIST OF THE CENTURY

Alfred Fournier has certainly been a favourite character amongst dermatovenereologists of the past century, and the above appellation is here given to him in recognition of his wholesome dedication to the craft. This is no place to detail the full gamut of Fournier's contributions to venereology, but it would be important to note that apart from his pioneering clinical advances in the field, it was the powerful human in Fournier that contributed so much to France's battle against syphilis

in the pre-antibiotic era. A highly ethical man, Fournier invariably put French society first in his crusade against syphilis, and in dealing with the social aspects of the disease, he perched himself as a vocal and life-long defender of its most vulnerable and innocent victims (Fig. 4). On top of his many clinical breakthroughs and worldwide influence, it was this aspect of his that had him widely commemorated in May of 1932, when an international conference on syphilis in Paris was organized in honour of his one hundredth birthday. The centenary of his death has been less widely celebrated, but recognized it has been, not only in this article, but also in a historical video tribute uploaded to *YouTube* [25] and a privately published book length biographical reflection written in his memory [26]. To those interested, such contributions may serve as a palatable introduction to the life and legacy of one whose name will forever be cherished as a practitioner *par excellence* in the annals of dermatovenereology.

REFERENCES

1. Crissey JT, Parish LC. The Dermatology and Syphilology of the Nineteenth Century. New York: Praeger. 1981. Chapter 5: Lues I. p. 80.
2. Smith GL, Bunker CB, Dinneen MD. Fournier's gangrene. *Br J Urol*. 1998;81:347-55.
3. Lewis RT. Necrotizing soft-tissue infections. *Infect Dis Clin North Am*. 1992;6:693-703.
4. Bosshardt TL, Henderson VJ, Organ CH Jr. Necrotizing soft-tissue infections, in RG. Holzheimer, JA. Mannick (eds.) *Surgical Treatment, Evidence-Based and Problem-Oriented*, Zuckschwerdt Verlag GmbH: Munich. Presentation and Diagnosis section. 2001
5. Bunker CB, Neill SM. Chapter 71: The Genital, Perianal, and Umbilical Regions, in T. Burns, S. Breathnach, N. Cox, C. Griffiths (eds.) *Rook's Textbook of Dermatology 8th Edition*, Sydney: Wiley-Blackwell. 2010, p.71.31, Table 71.22.
6. Corbus BC, Harris FG. Erosive and gangrenous balanitis. The fourth venereal disease. *JAMA*. 1909;52:1474-7.
7. Fournier JA. Gangrène foudroyante de la verge. *La Semaine Médicale*, 1883 Dec; 3(56): 345-7. An English translation of this article was produced by Alexander S. Corman in 1988 and widely popularised in an article edited by his father Marvin Corman. See *Dis Colon Rectum*. 1988;31: 984-8.
8. Fournier JA. Etude clinique de la gangrène foudroyante de la verge. *La Semaine Médicale*. 1884;4:69-70.
9. Tilles G. The Hôpital Saint-Louis From 1607 Until 1945, in D. Wallach, G. Tilles (eds.) *Dermatology in France*. Editions Privat. Paris: Pierre Fabre Dermo-Cosmétique. 2002. p. 411. Towards official recognition of dermatology.
10. Chevallier J. Antoine Gailleton (1829-1904). une double vocation: Professeur de dermato-vénéréologie et maire de Lyon. Communication à la Société française d'Histoire de la Dermatologie, le 4 décembre 1998. Retrieved March 2015 from: <http://sfhd.chez.com/ecrits/gaille.htm>.
11. Darier FJ. Alfred Fournier 1832-1914. *Ann Dermatol Syphil*. 1915;5:513-28.
12. Darier FJ, Lane JE. Necrologie: Alfred Fournier 1832-1914. By J. Darier, Médecin de l'Hôpital Saint Louis, Translated with the author's permission, by John E. Lane, M.D., New Haven, Conn.



Figure 4: As a founder and inaugural president of the *The French Society for Sanitary and Moral Prophylaxis*, Fournier devoted himself to protecting French society from the ravages of syphilis. This commemorative postage stamp was issued by the society in February of 1946. From www.stampcommunity.org.

- J Cut Dis Incl Syphil. 1918;36:482-93.
13. Nékám L. Un voyage d'étude dermatologique à la fin du XIXème siècle, in L. Nékám, *Deliberationes Congressus Internationalis IX-I, Budapestini 13-21 Septembre 1935, Vol. IV. Budapesteni: Institutum Typographicum Patria.* 1935. p. 185-209. Remark made on page 200.
 14. Milian G. Le Professeur Alfred Fournier (1832-1914). *Paris Médicale.* 1916;20: 133-137. Remark made on page 134, left column, 4th paragraph of new section.
 15. Fournier JA. Des relations de la leucoplasie buccale avec la syphilis et le cancer. *Tr. 13 Internat. Cong Med.* 1900;9:496.
 16. Fournier JA. *Les Affections Parasyphilitiques.* Paris: Rueff et Cie. 1894.
 17. Fournier JA, Marshall CF. *The Treatment of Syphilis; By Professor Alfred Fournier. English Translation by C.F. Marshall, M.D., F.R.C.S.* London: Rebman Limited. Chapter VII, Mercury, 1906, p. 51-56, 59-62.
 18. Fournier JA, Marshall CF. *Op Cit.* Chapter XX, Iodide of Potassium. 1906, p. 184, 187, 189-191.
 19. *Ibid.* p.189.
 20. Civatte J. The French Society of Dermatology and Syphilology, in D. Wallach, G. Tilles (eds.) *Dermatology in France.* Editions Privat. Paris: Pierre Fabre Dermo-Cosmétique. 2002. p. 286-287.
 21. *Ibid.* p. 299.
 22. Tilles G. *Op Cit.* p. 415, The Hôpital Saint-Louis, seat of world dermatology congresses. 2002.
 23. Fournier JA. *La Syphilis Héritaire Tardive.* Paris: G. Masson. Section X: Triade d'Hutchinson, 1886. p.63.
 24. Hutchinson J. *Syphilis.* London, Paris, New York, and Melbourne: Cassell & Company Limited. The formal dedication reads: To Alfred Fournier, as a small expression of friendship and high esteem this work is dedicated. 1887.
 25. <https://www.youtube.com/watch?v=YLg9SQvFqII>. Alternatively, search 'Jean Alfred Fournier' on YouTube to find the video.
 26. Toodayan N. (December 2014) Jean Alfred Fournier (1832-1914): 'Benefactor of Humanity'. Clark and Mackay: Brisbane (ISBN 9780992467821). A much more detailed account of Fournier's life and works with a full list of references can be found in this work.

Copyright by Nadeem Toodayan. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Source of Support: Nil, **Conflict of Interest:** None declared.