

Osteopathic manual treatment of children with scarlet fever in the nineteenth and twentieth centuries

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Abstract

Using several successive and adaptive search strategies, the research for this paper was restricted to childhood diseases of the nineteenth and twentieth centuries, and then further to scarlet fever during this period. The 40 sources used include 30 articles and ten books from the years 1887 to 1957. Based on the selected sources, a qualitative and quantitative analysis was performed and the results are presented. They are related to nine questions, which, among other things, take into account the publication frequency of this epoch, its change over time, treated body regions and underlying, osteopathy-specific etiologies and concepts. A further aspect of the paper focuses on the frequency and duration of the treatments use to treat scarlet fever, accompanying measures and the reported effects.

A number of endogenous and exogenous influences on organs and tissues are named in the presented osteopathic findings. Osteopathic concepts also include general, non-specific regional and local treatment approaches. Specific osteopathic etiological factors can be understood as predisposing factors, and present starting points for a multi-relational and context-dependent understanding of illness and healing. Additional measures to osteopathic manual treatment are similar to the pre-antibiotic mainstream medical approach to scarlet fever.

Introduction

The osteopathic manual treatment of children with infectious diseases has been a part of osteopathic healthcare since its early days. Little is known at present about exactly how osteopaths of the nineteenth and twentieth centuries treated children with infectious diseases, since there is a dearth of current publications on the topic. The subject will be approached using the example of scarlet fever.

Research methods

Using several successive and adapted search strategies, the research was restricted specifically to childhood diseases of the nineteenth and twentieth centuries, then further restricted to scarlet fever during this period. Medical and osteopathic databases (including PubMed, Osteopathic Medicine Digital Repository,

Osteopathic Research Web and the Early American Manual Therapy collection) and historical and current osteopathic journals and books were included (Table 1).

The following books were skimmed for the key words “scarlet fever” and “scarlet.” They are cited here by author and publication date—complete titles are provided in the bibliography for those not contained in the reference list: American Academy of Osteopathy 1998, Arbuckle 1994, Ashmore 1915, Barber 1906, Brookes 1981, Brooks 1997, Brooks 2000, Downing 1923, Fryette 1954, Frymann 1998, Hazzard 1901,³ Hulett 1903, Littlejohn 2009,²⁸ McCole 1935, McConnell 1899,¹⁶ McConnell 1917,⁶ McConnell and Teall 1906,²⁵ Millard 1922,¹⁷ Murray 1925, Page 1927, Sergueef 1995, Solano 1986, Still 1897,¹ Still 1902, Still 1910,⁵ Still 2005,¹⁵ Sutherland 1962, Sutherland 1986, Sutherland 1990, Sutherland 1998, Tasker 1905. Additionally, research on the topic and other expert interviews were performed.

The sources of the selected text references and the search terms used are presented in Table 2. Note: The table only includes sources from which text references to the topic were selected. The pieces from Denslow (1993), Littlejohn (2009) and Willard (1957) were found in book publications. Originally, these texts were published as articles or, in the case of Willard, as individual papers in the *Yearbook of the American Academy of Osteopathy*. For this reason, these pieces are considered to be articles in this paper.

Based on the selected sources, a qualitative and quantitative analysis was performed, and the results are presented. They are related to publication frequency during this epoch; its change over time; the body regions treated; underlying osteopathy-specific etiologies and concepts; accompanying measures; reported effects; the frequency and duration of the treatments; and treatment intervals.

Results

The 40 resulting sources include 30 articles and ten book contributions from the years 1887 to 1957. The most frequently represented literature type is the essay (24), followed by the case study (8), a combination of essay and case study (7), and the study (1) (Figure 1).

American Journals (sorted according to starting year)	
<i>Journal of Osteopathy</i> (1894-1964)	<i>The Osteopath</i> (1915-1918, 1929-35)
<i>Northern Osteopath</i> (1897-1902)	<i>Osteopathic Truth</i> (1916-1921)
<i>The cosmopolitan osteopath</i> (1898-1910)	<i>Journal of Osteopathic Ophthalmology, Rhinology and Otolaryngology</i> (1920-1927, 1929-1943)
<i>The Popular Osteopath</i> (1899-1900)	<i>The Forum of Osteopathy</i> (1927-1960)
<i>Journal of the Science of Osteopathy</i> (1900-1902)	<i>Western Osteopath</i> (1929, 1933)
<i>Osteopathic Knight</i> (1901)	<i>The College Journal</i> (1932-1942)
<i>The Osteopathic Physician</i> (1901-1924)	<i>Clinical Osteopathy</i> (1934-1957)
<i>Osteopathic World</i> (1903-1904)	<i>The Western Alumnus</i> (1937-1945)
<i>Massachusetts Journal of Osteopathy</i> (1903-1910)	<i>Osteopathic Digest</i> (1939-65)
<i>Southern Journal of Osteopathy</i> (1906-07)	<i>Dover Street Clinic Review</i> (1941-1943)
<i>Herald of Osteopathy</i> (1907-1930)	<i>Osteopathic Medicine</i> (1943-1945)
<i>Osteopathic Health</i> (1912-1943)	<i>The Digest of Osteopathic Medicine</i> (1944-1945)
<i>Osteopathic Magazine</i> (1914-1955)	<i>Journal of the American Osteopathic Association</i> (1950-2000)
	<i>Osteopathic Quarterly</i> (1951-1955)
English journals	
<i>British Osteopathic Journal</i> (1960-2000)	
German journals	
<i>Osteopathische Medizin</i> (2000-2010)	<i>Deutsche Osteopathie Zeitschrift</i> (2002-2010)
International journals	
<i>International Journal of Osteopathic Medicine</i> (1998-2010)	

Table 1. Journals searched

Although, at the end of the nineteenth and the beginning of the twentieth century, the presentation of scarlet fever in book form predominated, by the 1950s, it had been replaced by journal articles (Figure 2).

A very significant increase in the osteopathic literature on the treatment of scarlet fever occurs from the beginning to the middle of the twentieth century (Figure 3).

Osteopathic manual treatment of body regions

A majority of the authors (18 of 21, about 86 percent) who made statements concerning the treatment of body regions also mention the spine either in part or as a whole, and 17 authors mention treatment of the cervical spine

(about 81 percent). Six in this subgroup (about 29 percent) pay particular attention to the upper cervical spine region.

The treatment is also directed at other body regions, e.g., the mandible (10, about 48 percent), the head, excluding the mandible region (eight, about 38 percent), the throat (seven, about 33 percent), the ribs (five, about 24 percent), the abdomen in general (five, about 24 percent), the liver (four, about 19 percent), the spleen (four, about 19 percent), the kidneys (three, about 14 percent), the clavicle (three, about 14 percent) and the shoulder (two, about 1 percent).

Furthermore, the sources indicate body regions in the treatment of specific symptoms (e.g., fever and sore throat)

and the treatment of scarlet fever complications (e.g., nephritis, otitis media, heart disease and arthritis).

Conceptual osteopathic manual treatment approaches

The following general treatment concepts could be distinguished: The linking of osteopathic treatment concepts for pediatric illnesses with religious beliefs and a connection with nature;¹ proceeding from the center to the periphery;² consideration of functional activity in developmental periods; the influence of genes and habits; abnormal illness-specific irritability and its effects;

the danger of excess treatment stimulation;²⁴ treatment concepts associated with fever;^{3,4} constitutional treatment;³ elimination of bony and muscular blockages,^{3,5,6,7} e.g., by treating the neck or the clavicle; freeing excretory channels,^{4,5,8} such as the kidneys or by sweating; stimulation of the cutaneous system;⁷ strengthening of the immune system and detoxification;^{10,11,12,13,14} lymphatic treatment;^{5,7,15,16,17} influence on the musculoskeletal system;^{1,11,12,16,18,19,20,21} influence of the blood circulatory system and the nervous system;^{8,10,11,12,13,14,22} treatment approach for the blood, nerves and lymph of the fascial

Sources	Resources	Search terms	Hits	Selected	Authors
Databases	OSTMED-DR (07/2008)	Infant OR child OR Adolescent AND Osteopathic Manipulation OR Manipulation osteopathic	1175	2	Unknown author, 1906; Drinkall, 1923
	OSTMED-DR (02/2010)	Scarlet fever OR Scarlet AND Osteopathic manipulation OR manipulation, osteopathic	17	3	Hoefner, 1904; Morse, 1909; Sherwood/Feidler, 1936
Journals	<i>Herald of Osteopathy</i> (1907-1930)	Scarlet fever OR scarlet	2	2	Reid, 1924; Willard, 1927
	<i>The Cosmopolitan Osteopath</i> (1898-1910)	Scarlet fever OR scarlet	2	2	Pratt, 1900; Rickart/Kennedy, 1900
	The College Journal (1932-1942)	Scarlet fever OR scarlet	6	6	Jones, 1933; McCole, 1933; Price, 1933; Castlio/Ferris-Swift, 1934; Hedges, 1935; Gates, 1940
	<i>Osteopathic Health AOA</i> (1912-1943)	Scarlet fever OR scarlet	4	4	Unknown author, 1912; Unknown author, 1912; Unknown author, 1937; Duffell, 1938
	<i>Osteopathic Magazine</i> (1914-1955)	Scarlet fever OR scarlet	6	6	McMahan, 1933; Steen, 1951; Ulrich, 1941; Duffell, 1942, Duffell, 1943; Drew, 1915
	<i>The Osteopathic Physician</i> (1901-1924)	Scarlet fever OR scarlet	1	1	Beitel, 1910
Books		Scarlet fever OR scarlet	14	14	Still, 1897; Still, 1899; Still, 1902; Still, 1910; McConnell, 1899; McConnell, 1917; Hazzard, 1901; McConnell, 1906; Teall, 1906; Millard, 1922; Murray, 1925; Littlejohn, 2009 (reprint of an article from 1904); Willard, 1957; Denslow, 1993 (reprint of an article from 1933 and an article from 1944)

Table 2. Research overview

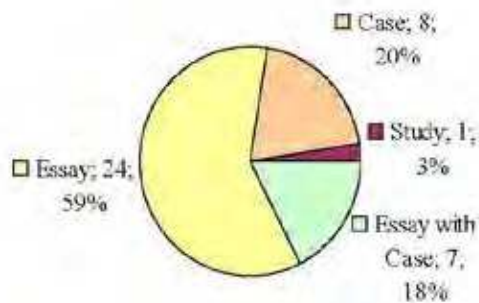


Figure 1 (above). Sources broken down by type of literature

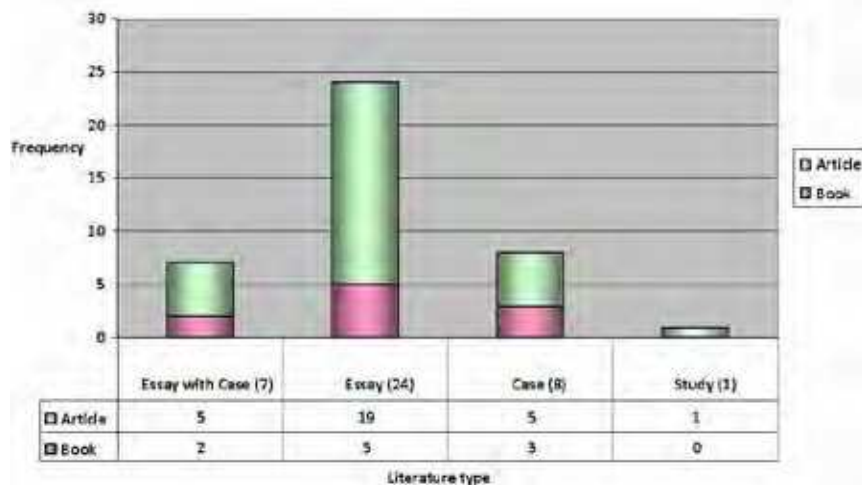


Figure 2 (right). Source broken down by type of publication

system;¹⁵ influence on the activity of the visceral system;⁵ and prevention.^{3,13,20,21,23}

The treatment of numerous scarlet-fever-specific symptoms (e.g., rash, intestinal disturbances, fever, sore throat, headache) and complications (e.g., ear symptoms, post-scarlet-fever nephritis, heart weakness, arthritis) are described. Non-specific or global treatment approaches to influence the entire body, as well as regional and local treatment approaches are also documented.

Documentation of the treatment of somato-visceral reflexes often involves the renal splanchnic region and, relatively often, the intestinal splanchnic and general splanchnic region as well. It more rarely includes the heart center. Influence on the capillary circulation is also described. Inhibition techniques are documented for capillary and general circulation and the abdomen. Viscerally, the abdomen, kidneys, liver, spleen and heart are treated.

It is also noted in numerous sources that tissue should be relaxed, in particular the back musculature and the neck.

The sources also describe techniques for the clavicles, neck, mandible, back, ribs, abdominal region, renal vessels and the stimulation of the kidneys and spleen. Treatments are also documented for the region between the eyebrows, drainage of the pharynx, treatment of the roof of the mouth and tonsils, and inhibition to influence the capillary circulation and hyperesthesia preparatory for the performance of additional techniques.

Further and accompanying therapeutic measures

Twenty-four (of 40) sources were found in which information on continuing and accompanying therapeutic measures was provided. The most frequently documented

were related to diet or fasting (nine, about 38 percent), hydrotherapeutic measures (eight, about 33 percent), sterilizations and/or disinfection and/or hygienic measures (nine, about 38 percent), bed rest (five, about 21 percent), directions for enemas and an interest in regular bowel movements (eight, 33 percent).

Osteopathic-specific etiological factors, osteopathic dysfunctions/lesions or osteopathic findings

The following osteopathic-specific etiological factors, osteopathic dysfunctions/lesions and osteopathic findings were documented in the text sources: Endogenous and exogenous influences on organs and tissue and/or life errors (e.g., nutritional errors^{11,12,24}); reduced resistance during convalescence from measles;²⁵ impairment of excretory function in organisms;²⁴ impairment of arteries and veins,^{5,7,24} such as the head and brain and/or drainage of the tonsils or the pharynx; congestion in the fasciae;^{15,24} impairment of the lymphatic system^{5,7,15,24} and organ findings.^{6,24}

General osteopathic lesions, in the sense of mechanical disturbances in the body or a limitation of mobility, were connected to scarlet fever^{4,11,12,13,20,21,25,26} and bony and/or muscular lesions in the region of the spine and the cervical spine,^{3,6,18,20,21,26,27} in the shoulder, hip, and thorax regions;¹⁸ and in the throat region, hyoid, mandibula and clavicle¹⁷ in particular. Documented secondary findings for scarlet fever were an impairment of the mucous membrane of the middle ear¹⁷ and scoliosis.²⁸

Effects and prognoses for osteopathic manual treatment

The prognoses given in the texts vary greatly. In three sources, a positive prognosis was made. According to Still,¹ scarlet fever can be cured in only three days. In four

sources, the prognoses vary greatly and are rather guarded. One source reports that, in children younger than one year, a greater mortality is associated with scarlet fever than in older children.⁶ According to McMahan,²⁹ scarlet fever is the most dangerous eruptive illness. Possible complications include ear and kidney illnesses,^{29,30} as well as eye illnesses and rheumatic complaints.²⁹

Overall, according to the great majority of authors, osteopathic treatment is successful,^{1,3,13,18,20,25,31} or has good results.^{2,29} In the majority of cases, a permanent recovery is the rule.³⁰ The risk of complications can be reduced through osteopathic treatment, according to an unknown author.^{10,23,29}

The progression of the illness and/or its duration is improved by osteopathic treatment.^{9,10,23} Beitel notes that the osteopath should be called in a timely manner.⁷ According to an unknown author,²³ an osteopathic treatment works better than a conventional medical treatment. In all sources containing a case study,^{9,18,19,32,33} a recovery was achieved. In one case, the state of health was recorded to be even better than it was before the illness.³¹

Frequency and intervals of osteopathic manual treatments performed

Based on the available information, one can speculate that two authors treated between three and nine times, one of those authors over a period of three weeks¹⁹ and Dr. Still⁵ over a period of three days. In two sources, at least at the beginning of an illness, multiple treatments per day were given.^{4,5} In two cases, daily^{3,32} treatments were given. Another source indicated treatments being given three days per week.¹⁹

Discussion

It must be considered that essays, studies and case studies from the nineteenth century and the beginning of the twentieth century do not meet current criteria. However, the majority of the text sources found originate from this time. According to Gevitz,³⁴ for example, case studies, at least in the early period of osteopathy, were published for marketing reasons and did not necessarily provide accurate reports of disease progressions. Nevertheless, they provide insight into osteopathic procedures and interpretations of the time. Qualitative and quantitative evaluations allow an overview of the osteopathic literature on scarlet fever.

Penicillin was discovered in 1928. From about the middle of the 1940s, it was produced in sufficient quantities for the civilian population.³⁵ It is striking that, after this time, only one source out of the 40 osteopathic publications on scarlet fever was found.³¹ It must therefore be assumed that the decline in osteopathic literature on the treatment of scarlet fever correlates to the medical treatment of scarlet fever with penicillin. At present, this form of treatment is also considered reliable for almost all streptococcal strains.³⁶ According to Gevitz,³⁴ within American Osteopathy, the method for the treatment of infectious diseases changed starting in 1930 from a manual treatment of osteopathic lesions to an increasing combination of manual and pharmaceutical treatment. As late as 1910, Beitel wrote that the hands of the osteopath are his thermometer and syringe.⁷

In Osteopathy, microbiological etiologies are not necessarily negated, and from the perspective of osteopaths of that time, could also play an active role in the development of illnesses, while osteopathic-specific etiological factors such as spinal lesions are viewed as a predisposing factor.³⁴ The therapeutic approaches

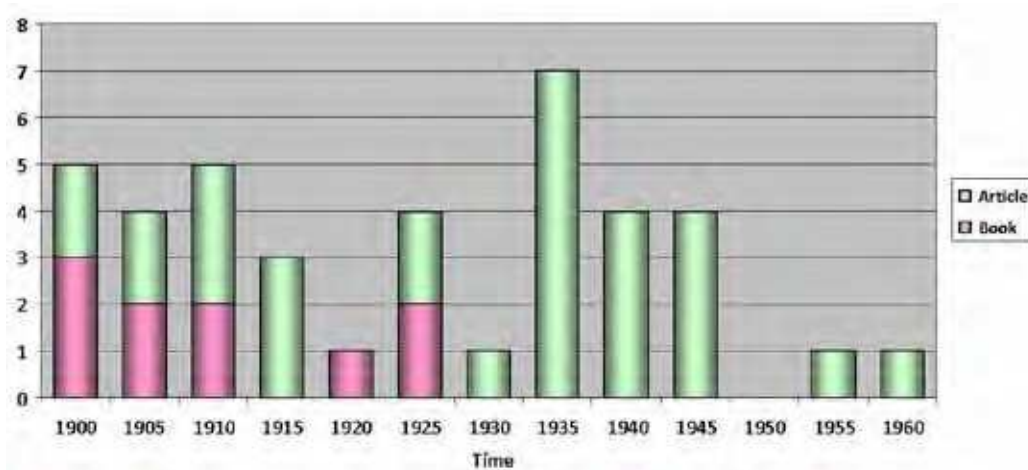


Figure 3. Publication frequency in five-year intervals broken down by type of publication

show multiple interdependent connecting factors in the improvement of the body's homeostasis during scarlet fever. The release of bony and muscular blockages to improve blood vessel and nerve function is a central tenet, as is the treatment of the immune system (e.g., through treatment of the spleen and the local and general lymphatic system), detoxification (e.g., treatment of the liver) and excretion (e.g., stimulation of the kidneys and the skin) and the neurovegetative system (e.g., through inhibition and somato-visceral reflexes).

From this perspective, in the case of an infection, osteopathic treatment would enable the body's immune system to better react to illness-causing microorganisms.^{37,38} Additional and accompanying measures for osteopathic manual treatment are similar to the pre-antibiotic mainstream medical approach for scarlet fever.

Conclusion

The abundance of text sources makes it clear that the osteopathic manual treatment of scarlet fever at the end of the nineteenth century and in the first half of the twentieth century was not a coincidence. On the contrary, it seems likely that the osteopathic manual treatment of scarlet fever was often performed by osteopaths during this time.

A number of endogenous and exogenous influences on organs and tissues are named in the presented osteopathic findings. Specific osteopathic etiological factors can be understood as predisposing factors. Osteopathic treatment, as well as examination, represents a starting point for a multi-relational and context-dependent general understanding of illness and health and non-specific regional and local treatment approaches. The release of

bony and muscular blockages to improve blood vessel and nerve function is a central tenet, as is treatment of the immune and neurovegetative systems, detoxification and excretion.

Descriptions of the osteopathic approach to scarlet fever disappeared with the introduction of immunizations. However, the question remains whether elements of the historical interventions described can also be used in complementary treatments today. Further studies are necessary, such as ones on the extent to which osteopathic treatment concepts and treatments exhibit similarities across the treatment of different childhood illnesses, and to what extent comparisons and the transfer of the results of this thesis to other infectious childhood illnesses (e.g., measles and chickenpox) are possible.

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CME QUIZ

The purpose of the quiz found on page 27 is to provide a convenient means of self-assessment for your reading of the scientific content in "Osteopathic manual treatment of children with scarlet fever in the nineteenth and twenties centuries" by Torsten Liem, DO (Germany) and Cristian Ciranna-Raab.

Answer each question listed. The correct answers will be published in the December 2011 issue of the *The AAO Journal*.

To apply for Category 2-B CME credit, transfer your answers to the AAOJ CME quiz application form answer sheet on page 27. The AAO will record the fact that you submitted the form for Category 2-B CME credit and will forward your test results to the AOA Division of CME for documentation. You must have a 70 percent accuracy in order to receive CME credits.

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