




Eponymous Signs of Tuberculosis: Part 2 (1909–1942)

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ABSTRACT

This historical review explores the development and significance of medical eponyms associated with tuberculosis between 1909 and 1942, highlighting their contribution to the diagnosis of the disease. During this period, 16 eponymous signs were described, including the well-known Brudzinski sign for tuberculous meningitis in children. Notable examples from radiographic studies include Stierlin sign for small bowel tuberculosis and the Fleischner ileocecal valve sign for ileocecal tuberculosis. Bedside physical examination findings also enriched clinical assessments, for instance, Schick's expiratory wheezing in bronchial lymphadenopathy and Grossman's displaced point of maximal impulse in dilated cardiomyopathy. Additional signs, such as Koeppe iris nodules observed during ophthalmologic exams and Helfe-Turner hip abnormalities identified in orthopedic evaluations, further expanded the clinical spectrum of tuberculosis manifestations. Early signs of the disease included Lorenz ankylosis of the thoracic and lumbar spine, Lombardi venous varicosities over the cervical and thoracic vertebrae, and the Lesieur-Privey finding of albumin in the sputum of pulmonary tuberculosis patients. Other relevant findings, such as Cattaneo's percussion dullness below the fourth thoracic vertebra and Riviere's dullness over the dorsal vertebrae, provided crucial diagnostic clues. Although some of these signs are no longer widely used, they underscore the enduring importance of physical examination in the diagnosis of tuberculosis. This review also includes brief biographical details of the individuals who identified these signs and advocates for integrating traditional clinical findings with modern radiographic techniques to improve diagnostic accuracy.

Keywords: Eponyms, history of medicine, physical examination, sign, terminology, tuberculosis.



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INTRODUCTION

Diagnosing tuberculosis has historically been a complex challenge, particularly when differentiating between acute manifestations and reactivations of the disease, often in the absence of clear pulmonary symptoms. Despite significant advancements in medical imaging and laboratory diagnostics, traditional physical examination signs remain valuable tools in



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clinical practice. Though less frequently emphasized in modern medicine, these signs offer critical insights when combined with a detailed medical history, contributing to a more comprehensive understanding of the disease's underlying causes and the patient's immune status.

Between 1909 and 1942, several eponymous clinical signs associated with tuberculosis were identified, marking a period of significant advancement in diagnostic methods. Physicians of this era relied on careful observation and physical examination to detect signs that provided insight into both pulmonary and extrapulmonary manifestations of the disease. These signs continue to play an important role in understanding tuberculosis and its clinical presentation.

In this review, we explore the historical development of these eponymous signs, focusing on the contributions of the physicians who first described them. By examining these signs in their historical context, we highlight their enduring relevance and emphasize the importance of traditional clinical skills in diagnosing tuberculosis, even amidst modern technological advancements.

MATERIALS AND METHODS

We conducted a comprehensive search of the PubMed and Medline databases using individual names along with the following Medical Subject Headings (MeSH) terms: *tuberculosis*, *extrapulmonary*, *signs*, and individual names. The initial list of individuals was compiled through a preliminary manual review of historical and clinical literature on tuberculosis, as well as reference works and databases focused on medical eponyms. This list included both well-known and lesser-known figures who contributed to the identification of named physical signs associated with tuberculosis. Additionally, biographical searches were conducted for each individual, reviewing biographies, relevant papers, reference books, and review articles to gather further pertinent literature. Google searches were also performed, focusing on obituaries, awards, and notable accomplishments related to the eponyms. The search was limited to biographies and named eponyms in the literature published up to August 1, 2024. Two reviewers independently screened the titles, abstracts, and full texts of the retrieved articles for relevance.

RESULTS

Our findings identified 16 eponyms, named after scholars from Austria, France, Hungary, Italy, Poland, Russia, the UK, and the USA, that commemorate physical signs of tuberculosis described between 1909 and 1942. Of these, one eponym is based on auscultation, 12 on observation, two on percussion, one on palpation, and one on auscultation (Table 1).

Clinical and Research Consequences

Brudzinski Sign

Józef Polikarp Brudziński (1874–1917) was a prominent Polish physician recognized for his contributions to pediatrics and his pioneering work in diagnosing tuberculous meningitis.¹ After earning his medical degree from Moscow University in 1897, Brudziński continued his training in several European cities, including Warsaw, London, Berlin, Vienna, Zurich, and Paris.¹ Upon returning to Warsaw, he became a director of the Karol and Maria Children's Hospital in 1907 and founded the Polish Pediatric Society in 1908.² He also held notable positions, including serving as the first rector of Warsaw University and chairman of the Warsaw Municipal Council.^{1,2}

Brudziński is best known for describing two clinical signs associated with tuberculous meningitis.^{3,4} In 1908, he introduced the Brudzinski reflex, in which passive flexion of one lower limb causes a reflex movement in the opposite limb.³ In 1909, he described the more widely recognized nape-of-the-neck sign, where passive neck flexion results in flexion of the lower limbs at the hips and knees, an important aid in diagnosing meningitis. This sign was observed in 20 out of 21 cases of tuberculous meningitis, outperforming other signs such as Kernig's and Babinski's.⁴

The pathophysiology of the Brudzinski sign involves the stretching of inflamed spinal nerves, which triggers reflexive flexion of the hips and knees to reduce discomfort. Historically significant, modern studies have shown that the Brudzinski sign has low sensitivity (ranging from 5% to 33.4%) but high specificity (85.8% to 95%). This means that a negative result does not rule out meningitis, particularly in infants and the elderly.^{5,6}

Schick Sign

Béla Schick (1877–1967) was a Hungarian physician who earned his medical degree from Karl Franzens University in Graz in 1900. He began his career working with Theodor Escherich and Clemens von Pirquet in the Pediatric Department in Graz and Vienna, later joining the Scarlet Fever Pavilion at St. Anna Children's Hospital.⁷ In 1918, Schick became Associate Professor of Children's Diseases at the University of Vienna before emigrating to the United States in 1923.⁸ In New York, he served as Director of the Children's Department at Mount Sinai Hospital and held prominent roles at other institutions, including SeaView Hospital and Columbia University.^{7,8}

Schick made significant contributions to the fields of allergy and immunology, notably co-discovering the mechanism of serum sickness with Clemens von Pirquet in 1905, and developing the Schick test in 1906 to determine immunity to diphtheria.^{9,10}

Table 1. Eponymous signs of tuberculosis (1909–1942)

Sign	Year	Description	Method	Significance
Brudziński (neck) sign ⁴	1909	Passive neck flexion causes flexion of the hips and knees, aiding in the diagnosis of meningitis	Observation	Tuberculous meningitis
Schick sign ¹¹	1910	Expiratory wheezing in patients with tuberculous bronchial lymphadenopathy; especially useful for diagnosing tuberculosis in infants	Observation	Bronchial lymphadenopathy
Abrahams sign ¹³	1910	Supraclavicular temperature differences and auscultation at the acromion process, aiding in the diagnosis of pulmonary tuberculosis	Auscultation	Apical pulmonary infiltrates
Lesieur-Privey or Lesieur sign ¹⁸	1911	Presence of albumin in sputum as an indicator of pulmonary tuberculosis	Observation	Albumin in sputum
Stierlin sign ²¹	1911	Repeated emptying of the cecum, seen radiographically as barium remaining in the terminal ileum and transverse colon	Observation	Ileocecal tuberculosis
Lombardi sign ²⁴	1913	Venous varicosities over the seventh cervical and first three thoracic vertebrae, indicating early pulmonary tuberculosis	Observation	Cutaneous venous varicosities near the C7 and T1 vertebrae
Lorenz sign ²⁸	1913	Spinal stiffness and kyphotic posture associated with ankylosis in patients with early spinal tuberculosis	Observation	Spinal tuberculosis
Grossman sign ³⁰	1916	Dilated cardiomyopathy with a displaced point of maximum intensity, commonly seen in patients with early pulmonary tuberculosis	Palpation	Diffuse cardiac apex beat
Koepe sign ³⁴	1917	Presence of nodules in the iris of patients with early tuberculosis	Observation	Ocular tuberculosis
Binda sign ³⁶	1919	Sudden elevation and forward projection of the shoulder triggered by passive head rotation, commonly seen in patients with early tuberculous meningitis	Observation	Tuberculous meningitis
Cattaneo sign ³⁹	1919	Dullness below the fourth thoracic vertebra, often associated with tracheobronchial lymph node enlargement in tuberculosis	Percussion	Tracheobronchial lymphadenopathy
Delmege sign ⁴³	1921	Deltoid muscle atrophy leading to chest wall flattening, typically on the side affected by apical pulmonary tuberculosis	Observation	Muscular atrophy
Riviere sign ⁴⁶	1921	Percussion dullness along the spinous processes of the fifth through seventh dorsal vertebrae in pulmonary tuberculosis	Percussion	Pulmonary tuberculosis
Michelson-Weiss sign ⁴⁷	1927	Perception of respiratory sounds through the ear affected by otitis media in patients with pulmonary tuberculosis	Observation	Otitis media
Fleischner sign ⁵²	1928	Finding of ileocecal valve insufficiency, commonly associated with ileocecal tuberculosis	Observation	Abdominal radiographic finding
Hefke-Turner sign ⁵⁶	1942	A radiographic finding in patients with septic arthritis secondary to tuberculosis	Observation	Hip radiograph finding

He received widespread recognition for his work, including the prestigious John Howland Award in 1954, and had the pediatric department at Albert Einstein Hospital named in his honor.⁸

In addition to his work in immunology, Schick identified a key clinical sign in tuberculosis: expiratory wheezing in children with pulmonary tuberculosis and enlarged bronchial lymph nodes. This wheezing, often heard during expiration while the child is at rest, helped distinguish tuberculosis from other respiratory conditions such as croup and asthma.¹¹ Schick described it as resembling the sound of bronchial asthma, with prolonged expiration and barely audible inspiration, typically caused by compression of a main bronchus by an enlarged, caseous lymph node.¹¹ Thus, the Schick sign refers to expiratory wheezing in patients with tuberculous bronchial lymphadenopathy and is particularly useful for diagnosing tuberculosis in infants.

Abrahams Signs

Robert Abrahams (1861–1935), a Russian-born physician who immigrated to the United States in 1880, earned his medical degree from the Columbia College of Physicians and Surgeons.¹² He served as a District Physician at Mount Sinai Hospital in New York City and held several academic appointments, including adjunct professor at the Postgraduate Medical School and attending physician at the Home of the Daughters of Jacob. He also served as President of the Board of Managers at Manhattan State Hospital.^{12,13}

Abrahams is best known for identifying two clinical signs associated with pulmonary tuberculosis.^{13,14} The first involves measuring cutaneous temperature in the supraclavicular fossae to detect temperature differences between the affected lung apices and the axillae. A higher temperature in one fossa suggests unilateral lung involvement, while bilateral involvement results in elevated temperatures in both fossae. Abrahams observed that these temperature differences were most pronounced in the late afternoon, ranging from 0.6 to 2 degrees Fahrenheit.¹³

The second sign is an auscultatory finding at the acromion process.¹⁴ By placing a stethoscope over the acromion and asking the patient to breathe, count, whisper, or cough, Abrahams noted that in early tuberculosis, there are prolonged expiratory sounds, louder spoken voice transmission, and increased whispered sounds at the lung apices. In advanced stages, tubular breathing, bronchophony, and whispered pectoriloquy indicated lung consolidation.¹⁴ Thus, Abrahams' signs refer to supraclavicular fossa temperature differences and auscultation findings at the acromion process, aiding in the diagnosis of pulmonary tuberculosis.

Lesieur-Privey or Lesieur Sign

Charles Léonard Lesieur (1876–1919), a French physician, began his medical career in Lyon, where he worked under Jules Courmont in a hygiene laboratory.¹⁵ Lesieur held prominent roles, including Chair of the Medical Clinic and Director of the Hygiene Office for the City of Lyon. He made significant contributions to public health during World War I and was appointed Chair of Hygiene at the Faculty of Medicine of Lyon in 1918, the same year he received the Legion of Honor.¹⁵ Paul Privey (b. 1885), who practiced in Tours and Lyon, focused on albuminoptysis in his 1911 thesis, investigating the presence of albumin in sputum as a diagnostic tool for tuberculosis.¹⁶

The Lesieur-Privey Sign, or Lesieur Sign, refers to the presence of albumin in the sputum of patients with pulmonary tuberculosis, a key diagnostic indicator identified by Lesieur and further studied by Privey. Their research showed that sputum containing Koch bacilli consistently yielded a positive albumin reaction, while a negative reaction suggested the absence of bacilli.¹⁷ In cases where tuberculosis was suspected, a positive albumin reaction without visible bacilli was later confirmed as tuberculosis through other diagnostic methods, such as autopsy or laboratory testing.¹⁸

Albuminoptysis was observed in approximately 75% of pulmonary tuberculosis cases, often appearing before other pulmonary signs. Its disappearance typically indicated the healing of pulmonary lesions. This reaction served as both a diagnostic tool and a marker of recovery.¹⁸ Thus, the Lesieur-Privey sign refers to the presence of albumin in sputum as a significant indicator of pulmonary tuberculosis.

Stierlin Sign

Eduard Stierlin (1878–1919), born in Zurich, Switzerland, studied medicine in several cities, including Zurich, Bern, Berlin, Hamburg, and Tübingen.¹⁹ He earned his doctorate from the University of Zurich and held appointments at various medical institutions, such as the Zurich Medical Clinic and the St. Gallen Cantonal Hospital.²⁰ Stierlin later became an assistant to Max Wilms in Basel and, in 1915, joined Ferdinand Sauerbruch at the surgical clinic in Zurich. He habilitated in 1916 with a thesis on the clinical X-ray diagnosis of the alimentary canal and eventually became a Professor of Surgery at the University of Munich.^{19,20}

Stierlin is best known for identifying a radiographic finding called the Stierlin sign, used in the diagnosis of early ileocecal tuberculosis.²¹ He observed that in cases of tuberculosis affecting the cecum and ascending colon, a radiograph taken 5–6 hours after administering a bismuth suspension would reveal the absence of the normal physiological

shadow in these regions. This absence, along with stricture and infiltration of the lower ileum, became a key diagnostic marker for ileocecal tuberculosis, particularly valuable when clinical diagnosis proved difficult.²¹

Lombardi Sign

Antonio Lombardi, a medical assistant at the Incurables and United Hospitals of Naples and director of the Dental Hospital in S. Giorgio a Cremano, made significant contributions to the understanding of early pulmonary tuberculosis.²² He also served as a professor of medical clinical therapy and was honored with the Commendation of the Crown of Italy in 1924, though limited historical details about his life are available.^{22,23}

Lombardi described the “varicose alarm zone,” a clinical sign indicating early-stage pulmonary tuberculosis. This sign presents as bluish venous varicosities near the spinous process of the seventh cervical and the first three thoracic vertebrae.²⁴ These varicosities, measuring 1 to 1.5 cm, become visible when the skin is stretched and may cause mild swelling or discomfort. Lombardi observed this sign in 88–90% of cases during early infiltration of the lung apex, often appearing alongside other signs such as supraclavicular dullness and a weakened vesicular murmur.²⁴

The underlying mechanism involves the venous network of the dorsal spinal cord, which connects to the vertebral and intercostal veins. The close anatomical relationship between the pleura, ribs, and vertebrae in the upper lung region contributes to the formation of these varicosities in early pulmonary tuberculosis. Thus, the Lombardi sign refers to venous varicosities over the seventh cervical and first three thoracic vertebrae as an indicator of early pulmonary tuberculosis.²⁴

Lorenz Sign

Adolf Lorenz (1854–1946), born in Vidnava, Austrian Silesia (now the Czech Republic), earned his medical degree from the University of Vienna in 1880.²⁵ He began his career as a surgical assistant to Eduard Albert and later became a professor of surgery at the University of Vienna.^{25,26} Lorenz co-founded the German Society for Orthopedics and Traumatology in 1901 and was recognized for his innovative treatments for congenital hip dislocation, clubfoot, and scoliosis in children.²⁷ He received numerous honors, including the Theodor Billroth Prize and the Goethe Medal.²⁵

Lorenz described a distinctive posture in patients with spinal tuberculosis, characterized by pronounced kyphosis, particularly in the upper dorsal region.²⁸ This posture causes the head to thrust downward and forward, with transverse

abdominal furrows resulting from trunk shortening. To maintain balance and prevent falling, patients bend their knees or hips when attempting to look upward. This posture is due to spinal rigidity caused by ankylosis and fibrosis in the thoracic and lumbar spine, commonly seen in early tuberculosis cases.²⁸ Thus, the Lorenz sign refers to the spinal stiffness and kyphotic posture associated with ankylosis in patients with early spinal tuberculosis.

Grossman Sign

Morris Grossman (1886–1955), born in Hungary and later immigrating to New York, earned his medical degree from Fordham Medical School in 1909.²⁹ He was a private practitioner specializing in neurology and played a significant role in establishing the neurology clinic at Mt. Sinai Hospital in New York, where he served as chief of the clinic. From 1942 until 1955, he also worked as a neurology consultant at Monmouth Memorial Hospital in New Jersey.²⁹

Grossman observed that slight cardiomegaly, with a diffuse apex beat palpable at the fifth left intercostal space, often appeared before or alongside the earliest physical signs of tuberculosis.³⁰ Thus, Grossman sign refers to dilated cardiomyopathy with a displaced point of maximum intensity, commonly seen in patients with early pulmonary tuberculosis.

Koepppe Sign

Leonhard Koepppe (1884–1969) was a German ophthalmologist who earned his medical degree from the University of Halle.³¹ He held assistant positions in Breslau and Leipzig before joining the University of Halle Eye Clinic, where he became a professor in 1918. Koepppe later worked as a research assistant at Bausch and Lomb Optical in New York and served as a research professor for ophthalmic microscopy at the State University of Iowa from 1930 to 1931.³¹

Koepppe is renowned for redesigning the slit lamp, enabling the microscope and slit illuminator to rotate around a common axis; an innovation that significantly improved ophthalmic examination techniques.³² His contributions earned him honors such as the Graefe Prize in 1922.³³

Using these enhanced ophthalmic tools, Koepppe identified early ocular signs of tuberculosis, including hyperemia, edema, and tissue thickening in the iris. He observed glassy swelling in the collarette and sphincter areas near the pupillary edge, with affected regions appearing semi-transparent and icing-like under magnification. These findings allowed for detection of tuberculosis at earlier stages than previously possible.³⁴ Thus, the Koepppe sign refers to the presence of nodules in the iris of patients with early tuberculosis.

Binda Sign

Pietro Binda (1876–1938) was an Italian physician who held various academic positions at the University of Pavia, including honorary assistant, volunteer assistant, and adjunct professor of hematology and pathology. He also served as the director of S. Anna Hospital and chief secretary of Dr. Ferraris Hospital.^{35,36}

Binda is known for describing a clinical sign observed in patients with early-stage tuberculous and bacterial meningitis.³⁶ The Binda sign involves the sudden elevation and forward projection of the shoulder following rapid passive rotation of the head to the opposite side. To test for this sign, the neck muscles are first relaxed through slow head rotation, followed by a sudden, extensive turn. A positive result is indicated by a quick upward and forward movement of the contralateral shoulder, often accompanied by contraction of the arm and forearm flexor muscles.³⁶ Thus, the Binda sign refers to the abrupt shoulder elevation and forward projection triggered by passive head rotation, commonly seen in patients with early tuberculous meningitis.

Cattaneo Sign

Cesare Cattaneo (1871–1930) was an Italian physician born in Salerno. He studied medicine in Parma and later directed pediatric departments at both the University of Parma and the Royal University of Milan, becoming Chair of Clinical Pediatrics in 1915.³⁷ He also served as a pediatric consultant and as President of the Italian Society of Pediatrics.³⁸

Cattaneo made significant contributions to the diagnosis of bronchial lymphadenopathy and tuberculosis.³⁹ He emphasized that changes in vertebral resonance, particularly in the tracheobronchial region, could strongly indicate tracheobronchial adenopathy in patients suspected of having tuberculosis. A technique detailed by Ceppellini involved percussing the vertebrae from the fourth cervical downward. Dullness beginning at or below the fourth thoracic vertebra could suggest enlarged tracheobronchial lymph nodes, though further investigation would be necessary to confirm tuberculosis.^{39,40} Thus, the Cattaneo sign refers to dullness below the fourth thoracic vertebra, often associated with tracheobronchial lymph node enlargement in tuberculosis.

Delmege Sign

James Anthony Delmege (1887–1970) was a British medical professional who held various roles, including Assistant Medical Officer of Health in Smethwick, Tuberculosis Officer for North-West Essex, and Medical Superintendent at Black Notley and Sible Hedingham Sanatorium.⁴¹ He served in the Royal Army Medical Corps during World War I and was later honored as an Officer of the Order of the British Empire.⁴²

Delmege observed in patients with pulmonary tuberculosis a characteristic subacromial flattening and shoulder drooping caused by atrophy of the deltoid muscle.⁴³ The flattening was most prominent in the region formed by the outer third of the clavicle, the acromion process, and the anterior axillary groove, and became more noticeable when the patient stood upright with arms hanging loosely.⁴³ Thus, the Delmege sign is characterized by deltoid muscle atrophy leading to chest wall flattening, typically on the side affected by apical pulmonary tuberculosis.

Riviere Sign

Clive Riviere (1872–1929) was a British physician known for his contributions to the treatment and diagnosis of pulmonary tuberculosis. He earned his medical degree from St. Bartholomew's Hospital in 1900 and later served at Tübingen University and Shadwell Hospital for Children.⁴⁴ His final role was as a physician at the City of London Hospital for Diseases of the Chest. Riviere is recognized for pioneering the use of pneumothorax in the treatment of tuberculosis and for advancing early diagnostic methods.^{44,45}

Riviere described the Riviere sign, a percussion finding in patients with pulmonary tuberculosis.⁴⁶ This sign involves the detection of bands of dullness during percussion along the spine, from the first to second dorsal vertebrae at the upper level and between the fifth and seventh dorsal vertebrae at the lower level. These bands are more pronounced on the side with greater disease involvement and are absent in healthy individuals.⁴⁶ Thus, the Riviere sign refers to percussion dullness along the spinous processes of the fifth through seventh dorsal vertebrae in cases of pulmonary tuberculosis.

Michelson-Weiss Sign

Nicholas Michelson and Morris M. Weiss, both affiliated with the Tuberculosis Division at Montefiore Hospital for Chronic Diseases and Belford Hills Sanatorium in New York, made a notable observation in patients with pulmonary tuberculosis who also had otitis media.⁴⁷ Michelson served as Assistant Medical Superintendent at Montefiore County Sanatorium and as Adjunct Physician at Montefiore Hospital for Chronic Diseases.^{48,49}

They discovered that patients with pulmonary tuberculosis and otitis media could hear intrathoracic sounds, such as rales and rhonchi, through their “deaf” ear—the one affected by otitis media.⁴⁷ This phenomenon puzzled patients, as they perceived respiratory sounds through their impaired ear only when oral auscultation detected lung sounds. If no lung sounds were present on auscultation, the patient heard nothing.⁴⁷

This observation helped distinguish otitis media from nerve deafness, where no sounds are perceived through the affected ear. Michelson and Weiss hypothesized that in otitis media, sound is transmitted more effectively through bone than through air, enabling patients to hear intrathoracic sounds despite hearing impairment.⁴⁷ The Michelson-Weiss sign refers to this unique ability of patients with pulmonary tuberculosis and otitis media to perceive respiratory sounds through the ear affected by otitis media.

Fleischner Sign

Felix George Fleischner (1893–1969) was a Viennese-born radiologist who earned his medical degree from the University of Vienna in 1919.⁵⁰ He held various positions in radiology, including Professor and Chief of Radiology at the Second Medical Clinic in Vienna and Chief of Roentgenology at the Vienna Children's Hospital.⁵¹ Fleeing to Boston during World War II, Fleischner worked at Massachusetts General Hospital and later became Director of Radiology at Beth Israel Hospital and Tufts Medical School. He was renowned for his research on pulmonary embolism and the pulmonary artery, and the Fleischner Society was established in his honor.^{50,51}

Fleischner identified a radiographic sign in patients with ileocecal tuberculosis, noting that the ileocecal valve remained open and patent, even with oral contrast, indicating valve insufficiency. The Fleischner sign refers to this finding of ileocecal valve insufficiency, commonly associated with ileocecal tuberculosis.⁵²

Hefke-Turner Sign

Hans William Hefke (1871–1964) and Vernon Clifford Turner (1907–1959) both made significant contributions to radiology and orthopedics.⁵³ Hefke served as a Fellow at the Mayo Clinic and taught radiology in Milwaukee, while Turner chaired the Department of Orthopedics at Evanston General Hospital.^{54,55}

Together, they described the Hefke-Turner sign, a radiographic finding in patients with septic arthritis secondary to tuberculosis.⁵⁶ The sign involves widening or alteration of the obturator shadow on radiographs, with varying degrees of severity. In some cases, the shadow may appear indistinct or obscured, indicating underlying hip-joint pathology.⁵⁶

CONCLUSION

This review spans the period from 1909 to 1942, highlighting various diagnostic techniques for pulmonary and extrapulmonary tuberculosis. Abrahams introduced temperature-based diagnostics, while Lesieur and Privey applied sputum analysis to detect albumin. However, the reliability of the Abrahams sign requires further validation, and sputum albumin analysis has limited utility in differentiating tuberculosis from other lung diseases.⁵⁷

In 1913, Lombardi and Lorenz described key signs involving the spinal column, with Lombardi identifying venous varicosities near the C7 and T1 vertebrae as indicators of early pulmonary tuberculosis, and Lorenz observing spinal rigidity due to ankylosing fibrosis in early cases. Brudzinski's neck sign remains the most recognized and effective in clinical practice.

During the early to mid-twentieth century, twelve out of sixteen clinical signs were identified through the physical examination skill of inspection. It is important to distinguish inspection from observation. Observation is the passive act of looking at or watching something, while inspection is a cognitive process that involves interpreting the significance of what is perceived. Physicians tend to understand clinical findings best when they can attach meaning to their observations. Inspection can be challenging to master because there is no standardized approach; it largely depends on the physician's knowledge and experience. For inspection to be effective, the observer must possess a deep understanding of the subject matter.

The advent of microscopy, pathology, and radiology revolutionized our understanding of disease. With these tools, physicians could visualize pathogens and pathological abnormalities within the body. Through the act of "seeing", they applied the physical examination skills of inspection, from which various "clinical signs" of disease emerged. Those knowledgeable physicians made inferences and ascribed meaning to what they observed, leading to the recognition of their findings through eponyms that honor their discoveries and contributions to medicine.

Fortunately, the visual cues obtained through inspection have been further enhanced by advancements in microscopy, radiology, ophthalmoscopy, and other "oscopies" used today to examine multiple organ systems. The visual signs identified during physical examination complement other visual findings detected through fluoroscopic screens, photographic films, microscopes, and slit-lamp ophthalmoscopy.

These physical examination signs continue to hold importance in the diagnosis of tuberculosis, reflecting the valuable methods employed by earlier physicians. Despite advances in modern medicine, a thorough history and physical examination, supported by these signs, remain essential for diagnosing both pulmonary and extrapulmonary tuberculosis. Furthermore, understanding the historical context of these physicians provides insight into their significant contributions to medical science. Although the use of medical eponyms is sometimes debated, their clinical utility should be carefully considered before any decision is made to discontinue their use. They embody contributions to both medical practice and historical understanding.

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