

LOUIS-BAR SYNDROME (ATAXIA TELANGIECTASIA): DENISE LOUIS-BAR

Elizabeth A. Coon, MD
Mayo Clinic
Rochester, MN

Introduction

Ataxia-telangiectasia or Louis-Bar syndrome is an early-onset multisystem neurodegenerative disorder characterized by ataxia, ocular-cutaneous telangiectasias and immune deficiency. Ataxia-telangiectasia is caused by mutations in the ataxia-telangiectasia mutated gene (*ATM*) and inherited in an autosomal recessive manner. At the age of 27, Denise Louis-Bar provided the eponymous description of a child with ataxia and telangiectasias in the French journal *Confina Neurologica*. This description linked the motor findings of ataxia with the dermatologic findings. An excerpt from Louis-Bar's original 1941 article entitled "Sur un syndrome progressif comprenant des télangiectasies capillaires cutanées et conjonctivales symétriques à disposition naevôïde et des troubles cérébelleux" follows:

The author reports a case of a 9 year-old child with a syndrome of the cerebellum with predominant ataxia-abasia together with speech disturbance and mental backwardness progressively developing since the third year of life. As regards the skin, the child shows patches of telangiectasias different from the simple angiomas, regularly and symmetrically arranged as also systematically ordered "café au lait" spots of fern like appearance. The double state as regards skin and nerves permits this case to be placed generally in the sphere of the phakomatoses without assigning it any particular form. The relations of this case to the Sturge-Weber-Krabbe disease are particularly discussed(Louis-Bar 1941).

Denise Louis-Bar's Early Life

Born in Liège, Belgium in 1914, Denise Bar lived with her parents in Spain for the first decade of her life. She later described the influence of her early years to biographers: "The poverty, social inequalities, and severe health problems in poor children in Spain at that time were so terrible that I decided that my life would be dedicated to giving the same opportunities for all children"(Evrard P. 1990). At the age of 10, she moved back with her family to Belgium where she spent the majority of her adult life and career.

Denise Bar received an M.D. from the Free University of Brussels in 1939. She also received a joint diploma in "education physique", a degree which sought to prepare physicians in the supervision of sports and physical education(Evrard P. 1990). This interest is evident later in life in a 1952 article on the "Paralysis of Cyclists" (*Louis-Bar 1952*).

Shortly after graduating from medical school, Bar married F. Louis and used the hyphenated name Louis-Bar thereafter. Mr. F. Louis was a civil engineer who joined the Belgian army in the Ardennes one month after their wedding with the onset of World War II. While Louis-Bar had anticipated practicing general medicine immediately after graduation, the difficulties of starting a private practice with the outbreak of World War II led her to specialize. She was accepted as a "volunteer resident" at the Institute Bunge in Antwerp, Belgium where she trained under Ludo van Bogaert, an academic neurologist with a prodigious research career that included several eponymous descriptions(Beighton P. 1990).

Louis-Bar and von Bogaert were working together in the outpatient clinic on October 2, 1940 when they examined a nine year old child with ataxia and telangiectasias. This case was assigned to Louis-Bar by von Bogaert with instruction to “study this case in detail”. The following report was published in *Confinia Neurologica* in 1941 where Louis-Bar described the neurologic findings including ataxia and developmental handicap with dermatologic findings and concluded that the syndrome represented a phakomatosis(Louis-Bar 1941, Evrard P. 1990).

Naming of the Syndrome

Initially, there was not much interest in Louis-Bar’s 1941 article which may be related to the timing in relation to World War II. However during the 1950’s, after Louis-Bar had moved on to the University of Liege, Dr. Elena Boder and her husband visited both Louis-Bar and von Bogaert(Evrard P. 1990). Boder and Sedgwick published their 1958 article describing 8 children with the disorder from 5 different families in *Pediatrics*(Boder and Sedgwick 1958). This publication linked the genetic features to ataxia-telangiectasia while referring to Louis-Bar’s 1941 description and “personal communication” of Ludo van Bogaert. Notably, this publication referred to the syndrome as “Ataxia-Telangiectasia”(Boder and Sedgwick 1958). In 1960, Sabine Pelc and Henri Vis suggested naming the disease “syndrome de D. Louis-Bar” in their publication “Familia ataxia with ocular telangiectasis (D. Louis-Bar)” (Pelc and Vis 1960). The 1961 publication by Thieffry, Arthuis , Aicardi and Lyon reported the first description of IgA deficiency which brought together the main components of ataxia-telangiectasia(Thieffry, Arthuis et al. 1961).

The 1964 publication in *Brain* by S.J.H. Miller and William Gooddy reported two Queen Square cases but also provided a remark on the naming of the syndrome as various names had been suggested for the disease(Miller and Gooddy 1964). The authors argued for the term “the Louis-Bar disease” or Louis-Bar syndrome for the “obvious reason” of the original description and that a descriptive title would be too lengthy because of the nature of the disease and “words mostly of unusual length” used in the description. The 1957 preliminary report by Boder and Segdwick proposed the term “Ataxia-Telangiectasia”(Boder E. 1957). In 1958, Boder and Segdwick argued that they described a “relatively new syndrome” which had only been established in the 1950’s and minimized Louis-Bar’s description of a single case without a familial pattern. Boder and Segdwick had referred to Louis-Bar’s description as “the prophetic clinical report of a single non-familial case without an autopsy” which was respectful but highlighted the lack of a pathologic entity(Boder and Sedgwick 1958). Miller and Gooddy argued that Madame Louis-Bar first clearly delineated the syndrome which later had been given a more detailed set of descriptive features. To them, “Ataxia-Telangiectasia” was unsuitable as “It does not suggest the identity of the original describer. It does not adequately describe either the clinical findings or the underlying pathology.” Miller and Gooddy concluded their section on nomenclatures as follows by eloquently arguing for the use of “the Louis-Bar syndrome”(Miller and Gooddy 1964)

During the 1960’s in particular, the term Ataxia-Telangiectasia was often followed by Louis-Bar Syndrome and at times “Madame Louis-Bar Syndrome” noting the gender of the author. While ataxia telangiectasia is now the most commonly referred to description for this disorder, Louis-Bar syndrome still appears in primary medical literature, even within the past 5 years from authors worldwide.

Priority

While Louis-Bar syndrome is synonymous with ataxia telangiectasia, the original description was in 1926 unbeknownst to Louis-Bar and not recognized during the 1950's publications delineating the disorder. The original description was reported in 1926 in the French literature by two Czech physicians, Ladislav Syllaba, an internist, and Kamil Henner, a neurologist. The report in *Revue Neurologique* describes three adolescent siblings with progressive choreoathetosis and ocular telangiectasias (Syllaba L. 1926). While Syllaba died at the age of 62, 4 years after publishing the 1926 report, the younger of the two, Henner, lived until 1967. With the rise of the eponym Louis-Bar syndrome in the 1960's, Henner submitted a manuscript to *Revue Neurologique* entitled "Apropos of the description of the 'Ataxia telangiectasis' by Mme Louis-Bar. Priority of the description, by Lad. Syllaba and K. Henner in 1926, of the conjunctival vascular network" that brought attention to the original 1926 description (Henner 1968). This was published a year following his death in 1968.

Louis-Bar's Career and Later Years

Following her training at the Bunge Institute, Louis-Bar was appointed as instructor in pharmacology at the University of Liege in 1943. In 1945 she became a neuropsychiatrist within the department of internal medicine where she remained until 1957. There, she was very productive publishing many manuscripts in neurology and internal medicine including a comparative work on phakomatoses. In 1957, her husband was promoted to headship of the Belgian national office for nuclear energy in Brussels. From the age of 43 onward, Louis-Bar's career path changed with a distinguished focus on caring for severely mentally handicapped children and adults in the Brussels area. Her final publication was in 1964 where she stressed the importance of a "global" diagnosis which evaluated physical issues as well as social problems in those with disabilities (Louis-Bar 1964). She also founded or contributed to the foundation of a dozen centers for mentally handicapped adults. These centers included day cares for pediatric rehabilitation and outpatient facilities in poor areas of Brussels. Louis-Bar remained active in the centers which used new methods to care for severely mentally handicapped children (Evrard P. 1990).

References

- Beighton P., B. G. (1990). Van Bogaert, Ludo. The Person Behind the Syndrome. B. G. Beighton P. London, Springer: 170-171.
- Boder, E. and R. P. Sedgwick (1958). "Ataxia-telangiectasia; a familial syndrome of progressive cerebellar ataxia, oculocutaneous telangiectasia and frequent pulmonary infection." Pediatrics **21**(4): 526-554.
- Boder E., S. R. P. (1957). "Ataxia-telangiectasia; a familial syndrome of progressive cerebellar ataxia, oculo-cutaneous telangiectasia and frequent pulmonary infection. A preliminary report on seven children, an autopsy and a case history." Univ. South. California M. Bull. **9**(15).
- Evrard P., B. A., Provis, M. (1990). Denise Louis-Bar. San Francisco, Norman Publishing.
- Henner, K. (1968). "[Apropos of the description of "Ataxia teleangiectasis" by Mme Louis-Bar. Priority of the description, by Lad. Syllaba and K. Henner in 1926, of the conjunctival vascular network]." Revue neurologique **118**(1): 60-63.

Louis-Bar, D. (1941). "Sur un syndrome progressif comprenant des t langiectasies capillaires cutan es et conjonctivales sym triques,   disposition naevo ide et des troubles c r belleux." Confin Neurol **4**: 32-42.

Louis-Bar, D. (1952). "[Paralysis of cyclists]." Rev Med Liege **7**(3): 82-83.

Louis-Bar, D. (1964). "[the Interview with the Parents]." Acta Neurol Psychiatr Belg **64**: 934-941.

Miller, S. J. and W. Goody (1964). "Madame Louis-Bar's Syndrome; a Case Record, with Comments Upon the Name, Classification and Significance of This Disorder." Brain **87**: 581-588.

Pelc, S. and H. Vis (1960). "[Familia ataxia with ocular telangiectasis (D. Louis-Bar syndrome)]." Acta Neurol Psychiatr Belg **60**: 905-922.

Syllaba L., H. K. (1926). "Contribution a l'ind pendance de l'athetose double idiopathique et congenitale." Rev Neurol **1**: 541-562.

Thieffry, S., et al. (1961). "[Ataxiatelangiectasis. (7 personal cases)]." Revue neurologique **105**: 390-405.