Upsala Journal of Medical Sciences

ISSN: 0300-9734 (Print) 2000-1967 (Online) Journal homepage: https://www.tandfonline.com/loi/iups20

Johan Anton Waldenström, a versatile doctor and pioneer: Professor of medicine and practising surgeon

Anders Waldenström

To cite this article: Anders Waldenström (2015) Johan Anton Waldenström, a versatile doctor and pioneer: Professor of medicine and practising surgeon, Upsala Journal of Medical Sciences, 120:2, 90-94

To link to this article: https://doi.org/10.3109/03009734.2015.1027427

Upsala Journal of Medical Sciences. 2015; 120: 90–94

informa
healthcare

Johan Anton Waldenström, a versatile doctor and pioneer: Professor of medicine and practising surgeon

ANDERS WALDENSTRÖM

Norrlands Universitetssjukhus, Umeå, Sweden

Key words: *Doctor, medicine, surgeon*

Johan Anton Waldenström was born in 1839. His father was Erik Magnus Waldenström, a district medical officer in Luleå whose district encompassed the entire upper Norrland. Erik Magnus was the first doctor in his family. He studied in Lund where he also obtained his Doctorate of Medicine (MD). Immediately afterwards, in 1819, he moved to Luleå, where he remained until his death. He is described as a forceful man, as a doctor, as a local politician, and as the head of his family. One might question a doctor being called forceful, but it was not uncommon for him to undertake taxing home visits by sledge and could well be away from home for several weeks at a time. One such journey was estimated at between 300 and 400 kilometres! This man was remarkable for his striving to provide his sons with an academic education. He fathered 15 children, all of whom but one reached adulthood. He paid for the academic education of all his 10 sons, which was considered a great achievement for a district medical officer whose salary was so small it was necessary to supplement it with a family-run farm.

As an example of their limited means, it can be mentioned that Johan Anton had to share his school books with his brother Paul Petter, who although he was one year older was in the same class. They stuck together like two peas in a pod throughout their studies. In their last years of upper high school, they studied together at the Lyceum in Uppsala. At university Paul Petter studied theology and Johan Anton medicine. In order to make the most of their meagre funds, they travelled together to Uppsala by steamer at the beginning of the academic year, taking with them as many necessities as possible including food which was made to stretch as far as possible. Naturally they boarded together. They listed all their expenses, and this was checked by their strict father. The circumstances are well described in numerous letters, often weekly and signed 'Your ever-loving father' and beginning with 'My dear boys'. Now and again a letter began curtly, 'My Boys'; 'And it hurt Johan and me [Paul Petter] so hard that we closed our books and we were unable to study for the remainder of the day'. The use of language and the meaning of words have truly changed over the years, and it demonstrates how hard it can be to interpret the essence of old texts without understanding the language of the times.

In the summers they had to return to their parents' home in Luleå and help with the farming. This was particularly disliked by Paul Petter, who considered such labour to be unworthy of a student! Having finished school, their father believed that they should take what we now call a sabbatical year at home in order to consider what line of study to follow. This too was financed by their father.

Both the brothers worked hard at their studies and could by no means be called 'jolly' students. The one who became more generally well-known of the two was Paul Petter who, as a result of differences of opinion about free communion and the significance of the creed, came into such conflict with the church, and specifically the Swedish Evangelical Mission, that he decided to help form an independent mission society foundation. Thus the Mission Covenant Church of Sweden was founded. In addition to his work within the Mission Covenant Church,

Correspondence: Anders Waldenström, Norrlands Universitetssjukhus, Umeå, Sweden. E-mail: anders.waldenstrom@medicin.umu.se

(Received 25 February 2015; accepted 26 February 2015)

ISSN 0300-9734 print/ISSN 2000-1967 online
DOI: 10.3109/03009734.2015.1027427

he was a senior lecturer in Gävle and a member of parliament. He was famous for his rhetoric and repartee. He was at one time Sweden's most read author. Alongside his brother, Johan Anton pursued an interesting and remarkable career as a doctor and scientist. He was considered not quite as brilliantly intelligent as his one-year-older brother, but he was extremely industrious, meticulous, and with such sound judgement that the faculty awarded him the Helmfeldtska and Hwasserska bursaries on completion of his medical studies in 1867. During his last summer of studies he had a temporary post at Sätra Brunn and showed such accomplishment that the faculty wanted him to continue within academia. The bursaries would finance one year overseas for further studies in Europe. This journey was planned by him and his tutor and took him amongst other places to Würzburg, Dresden, Vienna, and Prague. In Würzburg he came into contact with von Recklinghausen, and in Vienna he studied under Billroth. He returned to Uppsala full of impressions, experience, and new scholarship. But maybe most important of all was that he had also acquired good self-esteem. On finishing his studies he had been afflicted with self-doubt and a fear that he would not be a good enough doctor. A righteous man, he felt that he would be unable to improve his knowledge to be able to serve his patients in the best way possible. He expressed this in a prayer at the beginning of his inauguration speech, many years later. He most probably began to write the speech the day that he fell ill with an illness which led to his death 8 days later. The speech began with the prayer: 'true belief is the armour which alone can protect us against all temptations in times of happiness and failure'. After this he praised in turn His Majesty the King, His Excellency the Archbishop, the University Vice-Chancellor, and the members of the Greater University Council, all other University lecturers, and finally the University's student body. What is interesting is how this 15-page, unfinished text shows the traditions of the times in this context. He declares his respect for his colleagues and asks them for their support and approaches the students in a way that one perhaps would not imagine belonged to that age: 'This very word professor is seen by many as a vast dividing wall, which makes the distance between the teacher and the taught far too great. Away with it! It should rather be the opposite—let the scholar approach the teacher: for to whom can a disciple turn more safely for advice and information . . .'

On returning to Uppsala from his foreign travels he was awarded the post of assistant surgeon at the Akademiska Hospital. However, he soon applied for the post of 'Doctor for the Town and its Poor'. At the same time he started a private practice in the town. This quickly flourished, and he sought larger premises. He left his post at the Akademiska Hospital in order to take up the position of Town Doctor. This gave him a low salary but good opportunities to see and help patients. His great interest in teaching, based on his experience in Würzburg, led to his founding the Waldenströms Polyclinic where students could train in a polyclinic and perform house visits. This was totally new in Sweden and was highly appreciated, but it finished when Johan Anton died. Possibly it demonstrates that the form of training is not always paramount, rather the person who does the teaching, i.e. the lecturer's skilfulness. It is, however, obvious that the training gave social insights and experience from authentic home environments that were valuable for the students in their future careers as doctors.

After a dispute with a colleague about the most suitable timing to operate for cataracts, he decided to write his thesis on the subject. He took his doctorate of medicine with his thesis, written very quickly and entitled: '*När bör den hårda åldersstarren opereras*' ['When should the hard cataract of the elderly be operated upon?']. He was given a high grade and became an associate professor of surgery and obstetrics. For the last years of his life he was the permanent stand-in for the professor of practical medicine and became a professor in that subject on 18 October 1879.

On 15 November 1879 he was forced to suspend his daily surgery because of serious symptoms in his abdomen which he recognized from an earlier attack of perityphlitis, i.e. acute appendicitis. A few days later he suffered symptoms that can be interpreted as peritonitis. He realized that time was running out. Since he was accustomed to opening up both the abdomen and the bowel, he tried to persuade his assistant to operate on him, giving detailed instructions about how to proceed. He had earlier stated that a doctor's duty is to operate on a patient, even when the risks are great, if the patient will most certainly die without an operation. Despite this he could not manage to prevail on anyone to operate on him, and he died. He wanted his body to be examined after death by his colleague and friend Fritjof Holmgren, and this took place. His diagnosis and a previous episode of the same disorder were confirmed. It may seem ironic that he would succumb to an illness that he himself well could have been the first to cure surgically, had it happened to somebody near him other than himself. As ill luck would have it, he was buried in Uppsala Cathedral on the very day that should have been his inauguration as professor, 23 November 1879.

The funeral was attended by an enormous number of people. Shops were closed, and people assembled to honour the dead man. It is said that not since that of Linnaeus had so many people been present at a funeral in Uppsala. One hundred and fifty wreaths were apparently laid on his grave. Why would a doctor be honoured in

such a way? Probably it was because his patients realized he was clever and never lost interest in them, in combination with his winning personality. Moreover, one can assume that he was liked and respected by his colleagues for his teaching ability and his skills in medicine and science, if one can believe the words spoken at the time of his funeral, being aware of hyperbole on such occasions. According to one colleague, in another context, his humility, positive attitudes in the presence of his patients, and most of all his tireless interest in his patients night and day made him popular among patients not only from the town but also from its outlying districts and even from many distant parts of the country. There is an anecdote about a private trip he made on a steamboat with friends in Norrland. People in the area heard about it and flocked around in small boats in order to climb aboard to consult the doctor.

Some examples of observations and scientific work serve to illustrate his versatility and broad interests. His scientific production spanned observations within diverse areas of medicine such as eyes, surgery, gynaecology, internal medicine, and pathology. His contemporary colleague Professor Hedenius supposedly said, 'that no other, even equipped with Waldenström's unusual work capacity, would have been able to embrace all the special research fields of practical medicine'. Besides, '[he] always championed a definite opinion, which he could defend, often victoriously and always having the last word'. His first case study is also historically the most remarkable since it describes for the first time a successful operation for gastric volvulus which involved laparotomy and sigmoidostomy, rinsing the abdominal cavity and wound with carbolic acid according to Lister's directions, and resulting in a positive outcome. The operation was performed on 24 March 1879 and is described in *Upsala Läkareförenings förhandlingar 1878–1879*, vol. XIV: 'Volvolus flexura sigmoideae—Laparo—colotomia—Hälsa' by A. F. Lindstedt and J. A. Waldenström. This is number 4 under the title '*6 fall av tarmförträngning*' ['Six cases of intestinal stricture']. Lindstedt was the assisting student, and it was he who took notes. The medical record of the operation, the epicrisis, and comments were written by Waldenström. The pre-eminence of this operation in world literature was established initially by the London professor, V. Zachary, in 1939.

There is a very detailed case history and surgical notes, well worth reading; however, there is no room for them in this article. Rather I include extracts and comments showing the knowledge of the times, ways of expressing oneself, and hopes for the future.

One case concerns a 52-year-old man with all the signs of intestinal obstruction who arrived on 23 March 1879. His status is punctiliously described: 'In the afternoon a puncture was effected through the abdominal tissues revealing swirls of intestines, some faecal–foul smelling gas was released through three-quarter casing.'

For reasons unknown, the patient was moved the following day from the Akademiska Hospital to a private abode where an operation was initiated in the morning, using chloroform as an anaesthetic. An 11-cm incision was made just to the right of the linea alba, starting 5 cm above the symphysis. 'The wound revealed three stretched swirls of the large colon, the serous coating of which was much spotted. Because of the gaseous bloating of the said intestinal swirl, no hand could be inserted in the abdominal cavity through the incision for fear of the intestine bursting, so the upper swirl, which turned out to be the transverse colon, was pulled out and punctured'. After this it is noted that he examined the abdominal cavity with his hand, palpating its organs. 'Then when the coil of intestine which was outside the cavity (flexura iliaca coli) had been twisted a little to the left, its string-like attachment disappeared . . . the abdominal wall had contracted so much that when the intestine was to be returned to the abdominal cavity, it was impossible. This necessitated having to evacuate the flexura iliaca coli from most of its contents. To this end, a 2-cm incision was made in the intestinal wall in the direction of its teniae. Genom den sålunda erhållna öppningen bortskaffades ungefär en $^{1}/_{2}$ kanna tjockflytande mörka faeces. Sårränderna, omsorgsfullt rentvättade med karbollösning, förenades med catgutsuturer (enligt Joberts metod).'. . .'Sedan så mycket som möjligt av den i bukhålan nedrunna karbollösningen uppsugits med en skaftad svamp, förenades åter ränderna af buksnittet medels 4 suturae clavatae samt ytliga och djupa suturae nodosae af karboliserad tråd. Operationen varade i 1 $^{1}/_{2}$ timme.'

After this there is a detailed description of the course of events day by day, including a complication which is judged to be pneumonia. Despite this the patient is discharged on 6 May with a clean bill of health.

I would like to end this version of the case history with a comment quite typical for Waldenström. 'Då den sjuke oaktadt använd medicin icke haft öppning sedan 18 dagar, återstod ingenting annat än att öfverlemna honom åt sitt oundvikliga öde eller att på operativ väg söka häfva hindret. Visserligen var 18 dagars förstoppning och deraf följande nedsättning af krafterna en för en gynnsam utgång af operationen betänklig omständighet, men å andra sidan utgjorde frånvaron af kräkningar samt ömhet i buken ett gynnsamt tecken till, att den sjukes bukhinna icke var särdeles irritabel. Jag beslöt mig derföre för en operation, äfven om, såsom jag först förmodade, en elakartad nybildning i tarmen kunde vara med i spelet. Jag anser det nemligen *orätt* numera, att, när en patient går en oundviklig död till mötes, uppskjuta ett operativt ingrepp, som möjligen kan rädda den sjuke, derför att möjlighet

förefinnes, att sjukdomen är af den beskaffenhet, att den icke kan genom operation undanröjas, men hvilket man icke kan före operationen bestämdt afgöra. Erfarenheten har redan visat, att bukhålan kan, om nödiga försigtighetsmått iakttagas, öppnas och undersökas utan den ringaste fara.' This shows a true surgical mind, particularly the 'least danger', and even for a cardiologist it sounds like an underestimation of the risks.

In the field of gynaecology, he was particularly interested in ovaries and ovarian cysts and their pathogenesis. He studied the subject as a pathologist, but describes the procedure of '*Fem ovariotomier och en paraovariotomi*' ['Five ovariectomies and a unilateral ovarectomy'], all of which were successful and can be counted among his most important works, including '*Om behandlingen af för ymniga menses*' ['On the treatment of excessive menstruation']. In this context the description he gave in '*Transfusion med anledning af blödning efter förlossning*' ['Transfusion because of haemorrhage after delivery'] can also be mentioned. It concerns a 41-year-old woman who is haemorrhaging since he has not been able to remove the whole placenta. Having tried to pull out the remaining parts with his fingers, he has to resort to breaking them up. At this point the uterus contracts so strongly that the bleeding ceases. The woman, however, is exhausted, and Waldenström deems transfusion to be necessary. At times her eyes darkened and the radial pulse could not be detected. 'Med anledning häraf beslöt jag mig för att göra transfusion på patienten. Först försökte jag erhålla ett får, men då detta ej lyckades, erhöll jag blod från tvänne starka karlar. Blodet defibrinerades, silades tvänne gånger genom linne, allt under det att detsamma hölls vid en temperatur, som varierade mellan 35–37°C. 160 gram injicerades.' Five days later the patient died, and since the post mortem could not give clear cause, Waldenström wrote: 'På grund af hvad symptomerna under lifvet jemförda med de vid obduktionen funna förändringarna gifva vid handen, måste man antaga, att patienten aflidit af kraftuttömning, och att den gjorda blodinsprutningen icke haft förmåga att underhålla lifsverksamheten tills en för lifvets bestånd tillräcklig qvantitet blod blifvit återbildad.' Blood transfusion in those days was hardly standard practice. Blundell described in 1818 a blood transfusion with human blood where the recipient survived. In 1873, i.e. the year before the case in point, Sir Thomas Smith in London described a successful transfusion with defibrinated blood to a newly delivered infant. There were examples of case reports, but more often the result was negative. Nonetheless Waldenström attempted this treatment in an otherwise hopeless case. Interestingly enough he mentions that the donor blood came from 'a brace of strong men' perhaps in the hope that the donors' strength would be communicated through the blood.

On the subject of surgical techniques, Waldenström gives a highly precise description of how a tracheostomy should be performed. This too can be found in *Upsala Läkareförenings Förhandlingar*. He points out what a vast difference there is in doing a tracheostomy on a corpse compared to a living patient and how important it is to fixate the bronchus during the procedure.

In a lengthy medical history with comments, he deals with a case of onychomycosis. In another case he describes a young man who has caught a cold, becomes more and more sleepy with the supervention of neurology, and whose case concludes in purulent meningitis and death. Waldenström claims, 'Att en snufva, som alltid anses för en särdeles obetydlig åkomma, kan gifva upphof till en purulent meningitis, måste vara mycket sällsynt, alldenstund detta icke finns angifvet i den litteratur, som stått till mitt förfogande, och på grund häraf är det anförda sjukdomsfallet särskildt anmärkningsvärdt.'

Finally I want to mention the description of a 49-year-old woman who in 1878 suffered severe peritonitis 'hvarifrån hon endast långsamt tillfrisknade. Patienten hade nu fallit och slagit sacrum mot en trappa och som följd fått svårighet att urinera. Vid undersökning ingick 'touchering *per vaginam*' where a tumour was discovered in the posterior fornix. It was thought to be a calcified fibromyoma which was inhibiting the release of urine and so it was decided to attempt to redress the tumour. 'Efter några ögonblicks sakta tryckning på svulsten i riktning uppåt och något bakåt hördes ett skrapande ljud, som äfven uppfattades af patienten själf. Jag uttog genast instrumentet, patienten reste sig upp och yttrade, att hon nu erfor samma känsla af välbefinnande, som då hennes luxerade arm för några år sedan reponerades.' This medical case history unfortunately had an unhappy ending, since the patient soon afterwards experienced severe abdominal pains again which were diagnosed as peritonitis. She died 6 days later. At the post mortem, they found a dermoid cyst with teeth and bones (that presumably had caused the grating sound). It is unclear if the rupture of the cyst happened at the time of the fall or when the repositioning was attempted, but Waldenström commented, 'Alldenstund den häftiga smärtan i buken utgjorde det första symptom af den peritonitis, för hvilken patienten dukade under, och då smärtan inställde sig omedelbart efter undersökningen, så måste det av mig gjorda försöket att reponera svulsten antagas hafva varit vållande till bukhinneinflammationens uppkomst. Att detta lindriga ingrepp kunde hafva en sådan verkan, är icke förklarligt på annat sätt, än att en del af cystan genom fallet brustit och benet i dess vägg frakturerade samt att vid undersökningen något af dess innehåll utprässats i bukkaviteten.'

When Johan Anton died, he left his wife Elisabeth, née Gibson, and son Henning (later to become professor of orthopaedic surgery and my paternal grandfather) as well as an unborn son, also Johan Anton, who became the senior physician at the Surgical Clinic in Falun. The widow married again, this time to Jonas Waern, professor of medicine at the Karolinska Institute and step-father to Henning and Johan. Thus Johan Anton was the first of four professors of medicine directly descended from Erik Magnus as a result of his ambition to afford his sons an academic education.

Acknowledgements

Warm thanks for help with the literature are extended to Professor Bo Lindberg, Uppsala.

Declaration of interest: The author reports no conflicts of interest. The author alone is responsible for the content and writing of the paper.

Further Reading

1. Släkten Waldenström Codex. 1984. ISBN 91-86664-01-8.
2. En svensk pionjär inom bukkirurgin. Barthold Carlsson, Göteborg.
3. Upsala läkarförenings förhandlingar Bd VI–XV.
4. Pioneers in acute abdominal surgery. Oxford: 1939.