

## Case Report on an Osteopathic Treatment of a Congenital Pulmonary Cyst

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### Abstract

During organ screening in the 20<sup>th</sup> week of pregnancy of a 34-year-old pregnant woman, her baby was discovered to have a pulmonary cyst. Since this cyst was growing rapidly and, in the 25<sup>th</sup> week of pregnancy, had caused a lateral displacement of the heart and brought about bradycardia, the patient was given osteopathic treatment; it was possible to limit the growth of the cyst through the activation of lymphatic drainage of the thorax, stabilising the heart rate. The baby girl was delivered in the 36<sup>th</sup> week of pregnancy by means of a Caesarean section and a lung operation was carried out immediately afterwards. The newborn was subsequently given further osteopathic treatment, thereby enabling the lungs to be continually adjusted to the growth, and the powerful rotational tendency of the upper thoracic spine and the thorax were counterbalanced. It was also possible to loosen fascial torsion in the region of the lung, the diaphragm and the right pleura.

**Keywords:** *Osteopathic treatment in the 25<sup>th</sup> week of pregnancy; Congenital cyst; Hydrops fetalis; Foetal bradycardia; Thoracic lymph drainage; Lung maturation*

### Summary

In this case study of a foetus, which presented a congenital malformation of the lung, it was demonstrated that osteopathy was able to achieve a positive effect. In the 25<sup>th</sup> week of pregnancy, this cystic malformation measured 45 mm, with the result that the heart pushed against the lateral thoracic cavity and the baby thus exhibited a bradycardia rate of 100. From the 25<sup>th</sup> week of pregnancy, the foetus was given intrauterine osteopathic treatment and it was possible to relieve the bradycardia, resulting in the heart wandering back to the correct position again. The patient was prepared for a pre-term delivery by means of a maturation of the lungs. This demonstrated that it is also possible to work intrauterine using osteopathic methods for lymphatic drainage and that, up to a certain point, this technique may be used to also achieve a stabilisation in the congenital cystic adenomatoid malformation of the lung. In the 36<sup>th</sup> week of pregnancy, it was then possible to deliver a lively baby girl by means of a Caesarean section and undertake an operation on the lung on the same day. Little Sarah was given further treatment following the birth to ensure that she did not develop a postural anomaly due to the large scarring and in order to avoid the recurring lung infection, which is frequently described for congenital cysts of this type.

### History and Osteopathic treatment

I became acquainted with Mrs K. in the 25<sup>th</sup> week of her pregnancy. She was a delicate, very likeable, anxious woman. Anamnestically, her pregnancy was unremarkable up until the 20<sup>th</sup> week. It was her first child and she had allowed a genetic examination to be carried out in the early stages of her pregnancy by means of the OSCAR test. This was without pathological findings. [5, 2]

In the 20<sup>th</sup> week of pregnancy, during organ screening carried out in a special ultrasound centre, a 2-cm pulmonary cyst was detected in the baby. [1- 4]

### Ultrasound in the 20<sup>th</sup> week of pregnancy

**BIP:** 50 mm, **FOD** 61 mm, **KU** 44 mm, **ATD** 120 mm, **FL** 30 mm, **Weight:** 260g, **HA** pos., lively movement of the foetus,

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**Doppler:** A umbilicalis PI normal, venous doppler. A wave positive, 3-vessel umbilical cord, A pulmonalis PI and RI higher, reduced maximum speed.

Posterior placenta, normal amniotic fluid, heart: normal 4-chamber view,  
Smooth walled cystic mass in the right thorax measuring 23 mm x 21 mm.

**Heart rate:** 125-135.

**Sex:** female

**Diagnosis:** congenital cyst on the right lung

### **The patient was presented at the University Clinic**

US University clinic, 21 SSW:

Unstable foetal position, BIP 51 mm, TH 46 mm, FEM 32 mm, weight: 320g.

HA positive, positive foetal movement, posterior placenta,

Pulmonary cyst: right, smooth-walled 23 mm x 22mm, normal heart rate,

**Diagnosis:** smooth-walled congenital pulmonary cyst without additional malformation on the right, high-risk pregnancy.

It was explained to the patient that her daughter had a congenital single pulmonary cyst and that it concerned a pulmonary hamartoma, which is identified by an endobronchial extension. In most cases it is usually unilateral, but may also appear bilaterally. Most are limited to one segment, but may also affect an entire lung. There are various stages of this congenital malformation, with individual cysts or several cysts and, depending on the development of the pulmonary cyst, may also lead to a pulmonary hypoplasia of the rest of the lung right through to a hydrops fetalis resulting in intrauterine foetal death. If there is no detectable intrauterine compression of the lung, the prognosis is good following post partum surgical reconstruction. [1,2,3,4,5,14]

The patient was summoned for a weekly ultrasound check-up in the outpatient department of the gynecological clinic. Unfortunately, the ultrasound check-ups revealed a large growth of the pulmonary cyst and, in the 25<sup>th</sup> week of pregnancy, the cyst measured 44 mm in diameter and had displaced the foetal heart laterally onto the left wall of the thorax, resulting in foetal bradycardia. If one envisages this small foetal thorax with such a large cyst, one may also imagine just how much space a 4 cm cyst requires in such a small thorax and the impact that it has on the other chest organs.

### **US University clinic 25.SSW**

Unstable foetal position, BIP 65 mm, TH 58 mm, FEM 43 mm, weight: 680g.

HA positive, positive foetal movements, posterior placenta,

Pulmonary cyst: right, smooth-walled 44 mm x 43 mm, heart rate 100-105/min, heart displaced to the left

**Diagnosis:** pulmonary cyst, early stage bradycardia, high-risk pregnancy.

The patient approached me since, as a result of diverse illnesses, she had personally experienced improvement and healing by means of osteopathy and because, in my capacity as gynecologist and osteopath, I work with many pregnant women and am familiar with pregnancy.

### **Osteopathic treatment in the 25<sup>th</sup> week of pregnancy**

I began by treating the mother and equilibrated the autonomic nervous system via the sympathetic nervous system along the spinal column and the parasympathetic nervous system in the region of the sacrum and occiput. Muscle energy treatment was carried out on the restrictive diaphragm on the right-hand side. [7] The uterus lay relaxed in the abdomen and I thus drew my attention to the foetus. Since the midline was very weak, I placed an ignition over the sacrum and then worked in the thorax area. [12] I sensed a powerful dominance of the pulmonary cyst, resulting in a displacement of the mediastinum and the heart, with compression of the pericardium. The activation of lymphatic drainage of the cyst and the thorax via the thoracic duct, it was possible to discern an easing of tension in the heart and lung region. [8-13]

Following the treatment, I monitored the heart sound by means of an ultrasound; the heart rate was at 118-122/min. I instructed Mrs K. to return for a check-up in one week's time.

### 2<sup>nd</sup> treatment in the 26<sup>th</sup> week of pregnancy

In the meantime, the patient had again been for an ultrasound check-up at the university clinic. The latter was extremely pleased, since the cyst had not increased in size in the past week and the heart rate lay in the normal range of 120-160/min.

#### US 26, SSW

Unstable foetal position BIP 67 mm, TH 61 mm, FEM 46 mm, weight: 830g.

HA positive, positive foetal movement, posterior placenta,

Pulmonary cyst: right, smooth-walled 45 mm x 44 mm, heart rate 130-140/min

**Diagnosis:** pulmonary cyst, high-risk pregnancy.

During the treatment I again activated the lymphatic drainage in the thoracic region [13] and stabilised the position of the thoracic organs, especially the lungs, heart and mediastinum. [8-11] Intrauterine, the baby girl reacted very promptly to my osteopathic treatment and, since the diagnostic findings had improved and I was not able to observe any strong restrictions, I made another appointment to see the mother-to-be in the 28<sup>th</sup> week of pregnancy.

### 3<sup>rd</sup> osteopathic treatment in the 28<sup>th</sup> week of pregnancy

Ultrasound at University Clinic on the previous day:

Ultrasound: breech presentation, BIP 73 mm, TH 68 mm, FEM 50 mm, weight: 1050g.

HA positive, positive foetal movement, posterior placenta,

Pulmonary cyst: right, smooth-walled 46 mm x 45 mm, heart rate 125-135/min

**Diagnosis:** pulmonary cyst, high-risk pregnancy.

Mrs K. was slightly unsettled. She received a twice-repeated cortisone injection for lung maturation and unfortunately the bradycardia returned, despite limited cyst growth, and she complained of poor sleep in recent days with incessant thoughts about her baby's wellbeing. Physically, she also experienced itching on the whole of her abdomen - especially at night in bed. Optically, it was not possible to detect any alteration to her skin, but - during the osteopathic treatment - it was possible to discern a restriction in the liver's mobility through the growth of the uterus. Treatment was applied to the inspir position and elevated diaphragm by means of fascial and muscle energy techniques. Stabilising of the autonomic nervous systems, which exhibited a sympathicotonia with a compression of the upper thoracic spine from Th5/Th6. [7]

The foetus again exhibited a leftward pressure from the pulmonary cyst. Once again, an ignition was made in order to reinforce the midline [12] and the vitality and then work was carried out on the lymph, on pressure ratio between the lungs and heart and on the baby's diaphragm. She reacted promptly and positively.

I left it up to the pregnant woman to decide when she wanted to return, giving her a sense of reassurance. She opted for a 10-day cycle, in which the osteopathic treatment always focused on the lymphatic drainage. The ultrasound findings showed that the cyst growth had been curtailed through the osteopathic treatment, and the patient was thus able to reach the 36<sup>th</sup> week of pregnancy.

### Ultrasound, 36<sup>th</sup> week of pregnancy

I. Head presentation, BIP 91 mm, TH 89 mm, FEM 69 mm, weight: 2700g.

HA positive, positive foetal position, posterior placenta,

Pulmonary cyst: right, smooth-walled 47 mm x 47 mm, heart rate 118-125/min

**Diagnosis:** pulmonary cyst with early signs of bradycardia, high-risk pregnancy.

The university team of gynecologists and pediatric surgeons opted for a planned Caesarean section at the end of the 36<sup>th</sup> week of pregnancy and an immediate operation on the newborn after the birth.

I again treated the pregnant woman shortly before the Caesarean. Mrs K. gave birth to a lively daughter weighing 2650g/47 cm and with an Apgar of 9/9/9 in spinal anaesthesia, and was briefly able to hold little Sarah in her hands after the birth and thus initiate a bonding process. The newborn was operated on the very same day and the major operation was undertaken without any difficulty. It was possible to save the upper right pulmonary lobe; the medial and inferior lobes of the right lung were reviewed and found to be almost entirely complete. The histological specimen was benign. Considering the severity of the operation, the daughter recovered very well with a period of three weeks and was soon able to be breastfed.

### 6 weeks following the birth

I had the opportunity to treat little Sarah. She was delicate, rosy, had been entirely breastfed, her weight was 3100g and she was 51-cm in length. During the course of the osteopathic treatment, I discovered a strong fascial pull from the right atlanto-occipital joint right down to the pelvis, with a rotation of the upper thoracic spine in the region between Th 2 - Th 7. A right elevated diaphragm with a loss of mobility of the liver and with umbilical strain. Lateral compression of the midline. [6] Following osteopathic work on the transversal fluctuation and the transversal axes by means of fluid and fascial techniques, it was possible to stabilise the diaphragm elevation, the umbilical strain, C0/C1 and the midline. Intrahepal work released the restriction of the liver and stabilised the metabolism. This was followed by work on the lateral expansion of the right lung and the large surgical scarring, which rotated the thorax and spine to the right. [8-11] Since Sarah had already been given intrauterine osteopathic treatment, she reacted very quickly and it was possible to counteract the thorax rotation.

I was able to attend to Sarah on a further two occasions in monthly intervals, before she moved with her parents to another state and is now being further treated by a very nice pediatric osteopath.

### Discussion

Children with congenital malformations or disabled children always present a challenge in osteopathy, since they may only be supervised within specific parameters. However this supervision can generally maintain the stability of vital functions, such as respiration, circulation, digestion, sleep and wellbeing for a longer period.

In the case of an intrauterine treatment of a malformation, it is necessary to have precise knowledge of the extent of the malformation, the anatomical relationships and the stages of development currently being made by the baby. In their embryonic and foetal state, the lungs – in particular - make several important steps in their development, such as the formation of the sacculi alveolares, the alveole, the formation of the surfactant. And the development of the lungs also continues for a long time after the birth. The intrauterine osteopathic supervision may only be conducted with a strict clinical monitoring of the foetus and, each time, it must be reconsidered as to whether it is expedient to continue with treatment and at which intervals.

In the case of Sarah, the activation of the lymphatic drainage was very successful, with the result that it was possible to curtail the powerful growth of the cyst. I was able to make this valuable experience thanks to the confidence bestowed in me by the mother.

However, since the growth of the lung continues after the birth, little Sarah must and will also continue to be given further osteopathic supervision following the operation in order to ensure as free a lung growth as possible, since the post-operative scarring continues to move the small thorax in a powerful rotation.

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