



Obstetrics and Gynaecology Cases - Reviews

CASE REPORT

The Contribution of Anthroposophic Medicament *Bryophyllum* to the Quality of Life of Patient with Diagnosis of Cavernoma during Prenatal Care: A Case Report

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Abstract

We present the successful prenatal and postpartum follow up of a pregnant woman with diagnosis of epilepsy due to brain cavernoma, and depression.

A 26-years-old woman had been receiving anti-epileptic drugs (carbamazepine and clobazam) for nine years, which were suspended at risk of teratogenicity at 10 weeks' pregnancy, when she started prenatal care. The diagnosis was made when she had her first seizure at 17-years-old, and the characteristic image of brain cavernoma was detected on MRI. She also suffered from depression and was medicated with fluoxetine since that time.

She attended the Anthroposophic Medicine Nucleus at the Federal University of São Paulo (NUMA-UNIFESP), where it is offered a comprehensive prenatal care program based in anthroposophic medicine. This comprehensive approach, the individualized care and attention, the use of *Bryophyllum argenteo cultum*, an anthroposophic medicine, in conjunction with her allopathic medicines, and the psychological

support resulted in her perception of feeling more vitalized, and mentally healthy, and might have contributed to seizure prevention.

Her improved perception of quality of life is shown in the SF-36 questionnaire. There was improvement in vitality, mental health, social aspect and mental component.

The pregnancy evolved uneventfully, and she delivered a healthy baby at 37 ½ weeks.

The management of pregnancy in women with chronic neurologic diseases poses an additional challenge and can increase risk both to mother and child. This positive outcome in a rare case makes this report relevant because points to a successful way to approach the prenatal care using anthroposophic medicines and therapies.

Keywords

Pregnancy, Cavernoma, *Bryophyllum pinnatum*, Epilepsy, Anthroposophic medicine, Prenatal care, Quality of life



Citation: Zugliani MF, Facina AS, Ramos RHW, Götz DP, Hosomi JK, et al. (2020) The Contribution of Anthroposophic Medicament *Bryophyllum* to the Quality of Life of Patient with Diagnosis of Cavernoma during Prenatal Care: A Case Report. *Obstet Gynecol Cases Rev* 7:170. doi.org/10.23937/2377-9004/1410170

Accepted: August 08, 2020; **Published:** August 10, 2020

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Introduction

Pregnancy poses a physical, mental and social challenge both on women and their families. However, for those who suffer from neurologic disorders or other chronic diseases this requires even further care. Pregnancy may worsen some pre-existing medical conditions, and even with proper treatment some diseases may impair fetal development due to either exposure to potentially teratogenic drugs or to adverse intrauterine conditions [1].

Epilepsy, of different etiologies, is the most common chronic neurological condition in pregnant women [2]. There are few studies reporting epileptic pregnant women with cerebral venous malformation in medical literature [3-5].

In patients previously diagnosed with epilepsy, a careful and multidisciplinary approach including neurologic and obstetrics attention is recommended. Possible adverse effects of antiepileptic drugs on the fetus should be carefully monitored [3].

During pregnancy, there are two main concerns in handling epilepsy due to cavernoma: First, the need to use antiepileptic drugs with teratogenic potential; and second, the increased risk of cerebral hemorrhage. There are a few report cases of cavernous angioma in pregnancy published in medical literature [4,5]. Despite being rare, it is a major cause of cerebral hemorrhage during pregnancy and post-partum [4]. Pregnancy may be considered a risk factor for aggressive behavior in cavernous malformations [6]. Bleeding risk is particularly high in patients who carry a cerebral vascular malformation gene, has family history or has a bleeding history. Bleeding or increase of cavernoma blood volume probably is due to the angiogenesis factors present during pregnancy, like female hormones and vascular growth factor (such as growth factor of vascular endothelium) [4].

Most of the times, surgical treatment is needed when supratentorial cavernous malformations patients experience seizures, neurological deficit, bleeding risk, and headache. Over 95% of patients present good or excellent results and can return to their previous level of activity [7]. During pregnancy, surgery carries more risks due to pregnancy and fetal factors such as maternal weight gain, difficulty to airway access, and inferior vena cava compression.

Thus, in a pregnant woman who presents little or no symptoms, the preferred treatment is conservative [4].

Even when conservative treatment is adopted, studies show that chronic stress can exacerbate the endogenous risk factors for cerebrovascular disease, presumably through hypothalamic-pituitary-adrenal axis (HPA) activation [8]. The association between epilepsy and depression suggests that a pathogenic mechanism could explain this relation.

This mechanism includes hyperactivity of the HPA axis and its neuro anatomical neuropathological complications, as well as disturbances in the serotonergic neurotransmitter systems, noradrenergic, glutamatergic, and gamma- aminobutyric acid (GABA) [9].

Anthroposophic medications are prescribed in about 60 countries and its use led to long term reduction in the severity of the disease symptoms and improvement of quality of life in patients suffering with chronic diseases [10-12].

Nevertheless, so far there is still a lack of systematically collected data on the use of natural remedies (herbal, homeopathic, anthroposophic, spagyric, Bach and Schlusser) during pregnancy and lactation. A study published in 2004 described the use of natural remedies during pregnancy and lactation in 139 women who gave birth in German institutions [13]. Therefore, it seems to be necessary to evaluate the use, efficacy, effectiveness, and safety of natural remedies during pregnancy and lactation.

A prolonged consultation that includes an extended history taking in account constitutional, psychosocial, and biographical aspects of the patient's illness and selecting optimal therapy is the basis of Anthroposophic Medicine (AM). This seems to exert a positive impact in health-related quality of life measured by SF-36 questionnaire both in physical and mental components. Therefore, we believe that a more comprehensive prenatal care based in AM may be beneficial to epileptic and depressive patients. This is particularly important since, according to Lancaster, et al., maternal anxiety can increase the risk of depression [14].

We were not able to find any studies or publications about anthroposophic treatment for epilepsy due to cavernous angioma during pregnancy.

Thus, we consider relevant to present the positive follow up and outcome of an anthroposophic oriented prenatal care of a young woman with epilepsy due to cavernous angioma.

Case Presentation

A 26-year-old woman, primigravida at 10 weeks of gestation at the time of her first appointment, had her first seizure nine years ago.

The magnetic resonance imaging (MRI) revealed right transverses sinus and superior sagittal ectasia, with confluence of sinuses. The angiography showed venous development in the left parietal region. Since then she had been taking carbamazepine 200 mg per day and clobazam 10 mg per day which were discontinued when she became pregnant (pregnancy risk category D, FDA).

She also suffered depressive symptoms although she was taking fluoxetine 20 mg per day (pregnancy risk category C).

At NUMA (Nucleus of Anthroposophic Medicine) we offer an integrative multimodal approach based in AM. She participated in a comprehensive program that offers medical follow-up, nutritional, psychological and physical therapy evaluations, and a personalized plan was designed to cover her physical, psychological, and social needs, and attended an educational program.

Between 10 and 18 weeks pregnant, she presented hyperemesis gravidarum and was treated with anthroposophic medications (*Artemisia absinthium* D2, *Cocculus indicus* D4, *Cephaelis ipecacuanha* D4, *Nuxvomica* D 10 and *Petroleum rectificatum* D8) with amelioration of symptoms.

The initial psychological evaluation showed slowed speech and movements, passivity, low self-esteem, a disposition for pessimism, lack of humor, helplessness, irritability, and anhedonia. She was currently unemployed, worried about being pregnant and about her future. She was emotionally attached to the negative aspects of her biography, and dwelled excessively in negative emotions aroused by the loss of her father and grandfather, and by the difficulties in her relationship with her mother. At this point, Antonovsky's sense of coherence scale [15] showed total score below average, with partial results: Comprehensibility (30th percentile), manageability (29th percentile), and meaningfulness (32nd percentile).

The psychological work was focused on her pregnancy, finding positive meaning and the rescue of mother/daughter relationship, searching significance in the traumatic events of her biography, and teaching adaptive coping strategies [16].

The component meaningfulness shows that the patient was able to give meaning to her life. She achieved

a greater sense to her pregnancy and could look at her future more hopefully and with more resilience, rescuing a full expression of her individuality.

The surgical approach of the cerebral cavernous angioma was not recommended due to her pregnancy.

The medicament-based treatment was centered mostly in anthroposophic medications due to its safety and efficacy. Anxiety and depressive symptoms were treated with *Bryophyllum argento cultum* throughout the entire pregnancy. *Bryophyllum argento cultum* D2 has hepatoprotective effects, inhibits anxiety, and has also anticonvulsant properties and stabilizes injured endothelium.

The 36-item short form survey (SF36) [17] was measured at 10 and 36 weeks of pregnancy, and three months postpartum to assess the impact of prenatal care in her overall quality of life (QoL). At 35 weeks pregnant, QoL showed improvement mostly due to the SF36 mental component score when compared to week 10 (18.2 percentile difference).

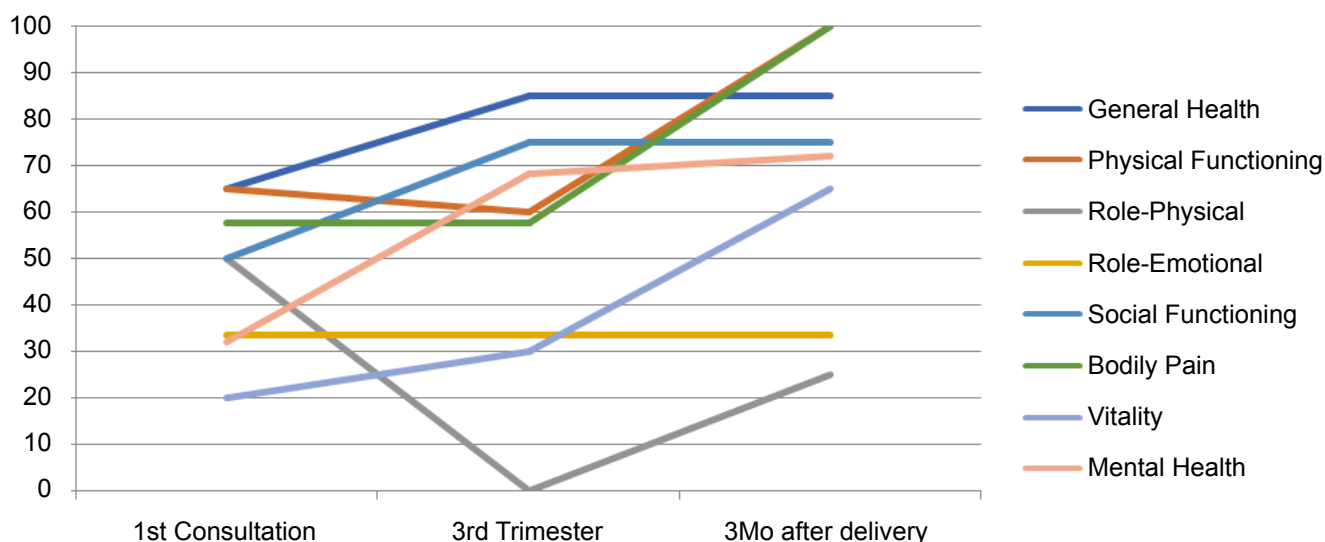
There was a 10% improvement in median psychologic component score and 25% improvement in median social component score when compared to her first evaluation.

Three months after delivery, SF-36 questionnaire showed an improvement of 48.9% when compared to 10 weeks pregnant. The median physical component score was 23.5% higher than at 10 weeks pregnant. The other important components were vitality (45.5%), pain (42.5%) and functional capacity (35%).

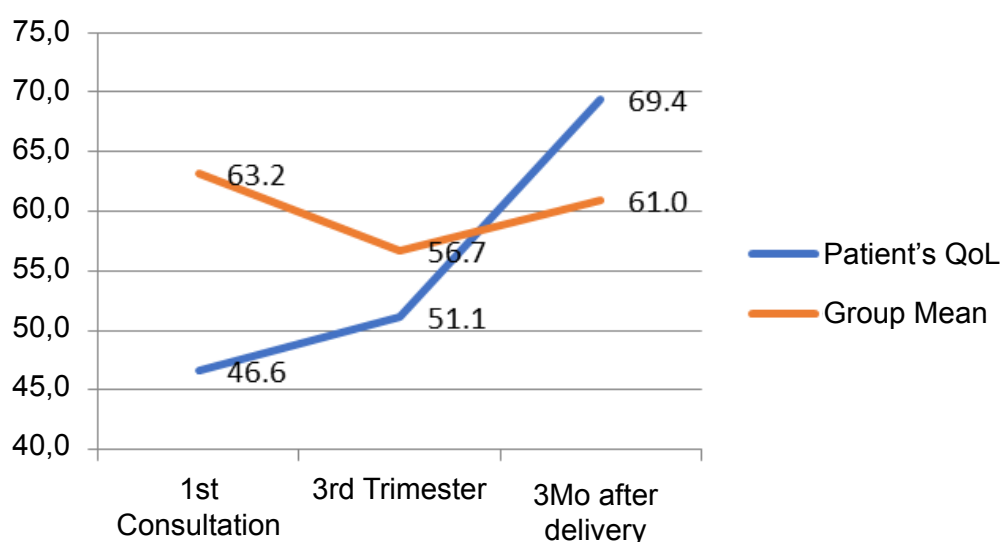
Her QoL improvement was also higher than the median of our prenatal patients. Data are shown in Table 1, Graphic 1 and Graphic 2.

Table 1: Scores (percentile) of the physical (physical functioning, role-physical, bodily pain and general health) and mental domains (vitality, mental health, role-emotional and social functioning) of 36-item Short Form Health Survey at 10 weeks pregnant, 36 weeks pregnant, and 3 months postpartum compared to prenatal patient's median.

PATIENT PRENATAL CARE PATIENTS MEDIAN						
Consultation	1 st consultation 10 weeks pregnant (patient)	36 weeks pregnant (patient)	3 months postpartum (patient)	1 st consultation (n = 266)	36 weeks pregnant (n = 176)	3 months postpartum (n = 8)
SF-36 score						
General health	65.0	85.0	85.0	68.3	73.2	74.4
Physical functioning	65.0	60.0	100.0	74.4	51.3	88.5
Role-physical	50.0	0.0	25.0	55.4	37.1	31.2
Role-emotional	33.3	33.3	33.3	58.3	55.8	45.8
Social functioning	50.0	75.0	75.0	69.6	66.8	64.1
Bodily pain	57.5	57.5	100.0	63.7	52.4	70.3
Vitality	20.0	30.0	65.0	52.4	49.5	53.1
Mental health	32.0	68.0	72.0	63.4	67.5	60.1
Physical component summary	51.5	46.5	75.0	62.8	52.7	63.5
Mental component summary	40.1	58.3	66.1	62.4	62.6	59.5
QoL	46.6	51.1	69.4	63.2	56.7	61.0



Graphic 1: Domain scores evolution at 10 weeks and 36 weeks pregnant and 3 months postpartum.



Graphic 2: Quality of life evolution (%) in comparison with prenatal care patients median.

Throughout pregnancy she remained neurologically stable, had an adequate gain weight (eutrophic body mass index status), and the fetal development was normal.

At 37½ weeks she went into spontaneous labor culminating in vaginal delivery of a female baby 2750 g, APGAR score 9/10.

She came to monthly postpartum follow-ups for 3 months, she breastfed her baby and remained seizure free. At this point, carbamazepine 400 mg per day was reintroduced.

Discussion

During pregnancy, healthy women present an attenuated response to stress. However, vulnerability, especially among African American women, may be associated with two to three times' greater increase in cortisol levels, and an even greater increase in secretion of placental corticotrophin-releasing hormone (CRH).

Placental CRH stimulates the production of maternal adrenocorticotrophic hormone (ACTH) and cortisol leading to substantial increase in maternal serum cortisol levels during the third trimester. During pregnancy, CRH concentrations increase over 1000-fold [18].

Besides that, studies in animals showed that the hepatic enzymes responsible for endo and xenobiotics detoxification and deposition diminish by 40% to 80% during pregnancy when compared to virgin mice [19]. This points to a greater hepatic demand caused both for the pregnancy as for stress hormones.

Based on that, our prenatal care program includes stress management and anxiety/depression reduction, trying to reduce its harmful effects over the liver, and we prescribe *Bryophyllum argento cultum*, an anthroposophic medication traditionally prescribed for emotional disorders [20]. The hepatoprotective activity of its leaves was described by Yadav and Dixit [21]. Moreover, Mora-Perez and Hernandez-Medel [22] showed

that *Bryophyllum* has anticonvulsant effect; its composition rich in flavonoid can help restore endothelial dysfunction [23]. The phytochemical analysis of *Bryophyllum* showed four different types of quercetin, and one of them is the major component, accounting for more than 33% of the 17 substances described [24].

In the present case, *Bryophyllum* may have contributed to controlling epileptic seizures because the antiepileptic drugs were withdrawn since she was 10 weeks pregnant.

As mental aspects began to improve, despite her unchanged emotional state, she felt herself more lively and sociable, and this reflected favorably on her general state of health.

The warm atmosphere provided by the health team was relevant in improving her mood. During pregnancy, the levels of oxytocin, the bonding hormone, rise. According to Kramer and Hogue, segregation and isolation are associated with poor pregnancy outcomes and increased mortality [25]. Thus, the social support network, including the health professionals, positively influenced general health promotion during pregnancy.

When she was 10 week pregnant, the QoL assessment was below average only in general health state and bodily pain domain scores when compared to Brazilian [26]. When she was 36 weeks pregnant, her general state of health had risen above standard, and bodily pain and social functioning were comparable to the average standard level.

In the third trimester of pregnancy women show significant decrease in functional levels ($p < 0.01$) compared with community non-pregnant women regarding pain (51.86×79.6), physical aspects (62.91×89.12), social aspects (74.0×84.06), vitality (47.24×58.04) and functional capabilities caused by physical health problems (45.0×86.73). Three months after delivery, only the scores general health, physical functioning and bodily pain were below average norm. Social functioning, vitality and mental health were average.

The worsening of the domain physical functioning when she was 36 weeks pregnant is an expected result due to the increase of the uterine volume. This is also described in other studies with pregnant women [27]. QoL usually decline by the end of pregnancy in the following domains: Physical functioning, physical role, emotional role, social functioning, bodily pain, and vitality, and the Mental health domain improves.

Contrary to what would be expected, the domains of pain and emotional role did not worsen, this may be attributed to the use of the medicament *Bryophyllum*, that has anxiolytic and analgesic properties [28].

There was a slight deterioration in the domain physical functioning, but still above our average median.

The domain mental health showed a significant improvement (32% to 68%). Usually there is 4.14% improvement. (Table 1).

Three months post-partum, she recovered 100% of physical functioning and bodily pain (Graphic 1 and Graphic 2).

Conclusion

This case report showed a positive outcome of a depressed pregnant woman with diagnosis of epilepsy due to brain cavernoma. We described the prenatal care based in a multidisciplinary health team. The comprehensive program that offers medical follow-up addressed her physical, psychological, and social needs. The use of the anthroposophic medication *Bryophyllum* in conjunction with the other approaches gave support for the patient to feel more vitalized and mentally healthier, improving her quality of life and her pregnancy outcome.

Considering the satisfactory outcome and the improvement of QoL during prenatal care, we propose that the anthroposophic approach to prenatal care can benefit patients suffering from similar conditions.

Contributors

MFMZ e RHWR were responsible for patient care and provided patient information, DPG designed tables and graphics, MUN designed and write the report, ASF, JKH, ECRF and MUN critically reviewed the manuscript. All authors reviewed and approved the final version.

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