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Osteopathic treatment of pregnant women in the second and third trimesters of pregnancy influences the incidence of cranial lesions in the newborn.

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INTRODUCTION

We, in our respective practices, are involved in osteopathic treatment of either pregnant women with a variety of presenting concerns, or newborns and infants with postnatal sequelae that may have resulted from intrauterine compression or a difficult birth. Newborns referred to the practice present with complaints such as colic, torticollis or cranial anomalies. Pregnant women coming to the practice have complaints of low back pain, sciatic pain and/or headaches plus gastric reflux, nausea of the first trimester, breathlessness as the pregnancy advances, thoracic pain as the body tries to compensate for the weight of the growing breasts, thoracic outlet syndromes for the same reason as the body adopts a kypho-lordotic posture in the cervical spine, carpal tunnel syndromes and often, symptoms encountered in the general population. The history given by the new mother usually includes discomfort and often pain during pregnancy and a long or difficult labour and/or delivery.

Steve Sandler, DO (Director, The Expectant Mothers Clinic, London, UK) gave a course on Obstetrics and Osteopathy (Toronto, 1998). During the course, he addressed in detail the changes that occur in the woman's body during the different stages of pregnancy. He also talked about the importance of osteopathic care during these different stages. These included postural changes

because of the increasing size of the uterus. He emphasised the importance of the junction vertebrae. He alluded to the influence of the hormonal changes in increasing ligamentous laxity. He emphasised how osteopathic care can maintain mobility in the spine and pelvis. He also noted how such care could restore the integrity of the central line of gravity as the posture of the woman changes with the progression of the pregnancy. This would allow for less discomfort throughout the pregnancy and an easier delivery.

Philippe Druelle (DO, France, Quebec), in his course on obstetrics, discusses the importance of differentiating the mother, the pregnancy and the baby when treating the pregnant woman. He states that the mother must be in balance with good mobility of the pelvis; the uterus must be in a perfect state i.e. not too tight and not too loose; the baby must be well centred, not too compressed and in the correct position for its passage. Therefore, if the mother is in balance and the baby is comfortable, the pregnancy is in a good state physically, emotionally, and spiritually.

Michele Dangreau-Mussat, D.O. (France) stated in her course on Obstetrics and Osteopathy that in obstetrics, nothing is static and that two women will be very different. She emphasises that each treatment technique must be adapted to the woman's individual needs.

Denyse Dufresne (DO, Québec) described in detail the process during the different stages of delivery. She correlated certain newborn osteopathic lesions that may occur at each stage if obstacles to the progression of the head and body of the baby are present. Solano describes the embryological development of the cranium and the dimensions of the fetal and newborn skull. He also discusses the different types and measurements of the female pelvis. He relates the different sequences of labour/delivery to various newborn cranial issues.

No studies have been done correlating treatment of the pregnant woman with reduction in the incidence of cranial osteopathic lesions in the newborn. The literature supports the fact that maternal pelvic factors and prolonged labour/delivery contribute to the sequellae in the newborn. Research also addresses the effects of osteopathic treatment of the pregnant woman in reducing back pain and sciatica. Ani Lafrance, in her thesis found that osteopathic treatment of the pregnant woman in the last month made labour/delivery more harmonious. However, we were unable to find any literature correlating osteopathic treatment of the pregnant woman with reduction in postnatal cranial lesions in the newborn. As a result, we have chosen to undertake this project.

We feel that in doing this study, we will be able to move a step further in helping the osteopathic practitioner realize the value in intervening osteopathically with the pregnant woman by evaluating how these treatments help improve, the initial experiences of the newborn in entering the world outside the womb.

THESIS ABSTRACT

The purpose of this study was to investigate if the incidence of newborn cranial lesions could be influenced by osteopathic treatment of the pregnant woman during the second and third trimesters of pregnancy. The literature supports that newborn cranial lesions do exist. There are numerous studies that elaborate on osteopathic lesions in the newborn and relate these to problems with the maternal pelvis. There are also studies that describe types of cranial lesions found in newborns after traumatic deliveries. Studies have shown direct correlation between uterine forces on the fetus and cranial lesions in the newborn. However, no previous studies have found evidence linking osteopathic treatment of the pregnant woman in impacting the incidences of these cranial lesions.

This study attempted to provide data correlating osteopathic treatment of the pregnant woman with a change in the incidence of newborn cranial lesions. The research was experimental and was a blind case-control study in which the evaluator of the newborn did not know which of the mothers received osteopathic treatment. A group of 20 pregnant women ages 25 - 35 were treated on a voluntary basis. These women, having met the appropriate criteria, formed the experimental group. Each subject received the appropriate number of treatments according to their needs, subject to a minimum of three osteopathic treatments. Three women were excluded from the study because their deliveries were done by unplanned caesarean section.

Newborns under the age of 6 weeks, of both the Experimental and Control Groups, were evaluated. The evaluating practitioner was blinded as to which group the newborns came from. The evaluation of the newborn occurred according to a prescribed assessment protocol and was documented by the assessor on a form designed for the study (Appendix 9). Statistical analysis was

done on the findings of the two groups of newborns to determine if there was a significant difference between the two.

The results found that both groups of mothers were consistent with respect to their mean age, which was 32 years. There were also no significant differences in the results of the delivery questionnaires given to both groups of mothers. Thus, the two groups were statistically homogeneous.

The data from the newborn examination revealed significant differences between the 17 newborns whose mothers were treated (“Experimental Group”) and the 17 newborns whose mothers were not treated (“Control Group”). In each of the cranial bones examined, there were statistically significant lesions in the Control Group. These included the right frontal and parietal bones in lesions of extension; the right temporal bones were in lesion; the right occipital condyle was lesioned in flexion; the left temporal bone was overlapped laterally; the occipital squama was in lesion; the ethmoid was in lesion and compacted. There was anterior compaction of the cranium and the shape of the cranium was abnormal in the Control Group. The right eye was smaller. At the caudal end of the core link, the Control Group had sacrum that were in lesion and compacted and no sacral mobility between the ilia. Sacral motility was in expiration. The only statistically significant anomalous result was that the SBS was sidebent and rotated left in the Experimental Group. Although there was no statistical significance, labour was 4 hours shorter for the treated group of mothers.

These results are consistent with the osteopathic model that suggests that forces applied to the cranium and sacrum of the newborn are related to the structure and function of the mothers’ bodies. Osteopathic intervention for the pregnant woman is therefore beneficial to the newborn as well. Thus, the results suggest a new paradigm for the osteopathic protocol for pregnant women, which recognizes the positive impact on the newborn child resulting from osteopathic treatment of the mother.

SOMMAIRE

Le but de cette thèse était de rechercher si l'incidence des lésions crâniennes chez le nouveau-né pouvait être influencée par le traitement de la femme enceinte durant les deuxième et troisième trimestres de la grossesse. Selon la littérature, on observe bel et bien des lésions crâniennes chez les nouveau-nés. De nombreuses recherches sur ces lésions ont établi un lien entre celles-ci et le bassin de la mère. D'autres études décrivent les types de lésions crâniennes des nouveau-nés après un accouchement traumatique. Des études ont démontré une corrélation directe entre les forces utérines sur le fœtus et les lésions crâniennes chez les nouveau-nés. Aucune étude n'a mis en évidence une relation entre le traitement ostéopathe chez la femme enceinte et son effet sur les incidences de lésions crâniennes chez le nouveau-né.

Cette thèse a essayé de présenter des données mettant en corrélation le traitement des femmes enceintes et un changement dans l'incidence des lésions crâniennes des nouveau-nés.

La recherche était expérimentale et consista en une étude aveugle contrôlée, dans laquelle l'examineur des nourrissons ne savait pas quelles mères avaient reçu le traitement ostéopathe. Un groupe de 20 femmes enceintes âgées entre 25 et 35 ans ont volontairement reçu des traitements. Ces femmes, qui répondaient aux critères prédéterminés ont formé le Groupe Expérimental. Chaque sujet a reçu le nombre de traitements nécessaires selon leur besoin, toutefois 3 traitements ostéopathiques étaient minimums. Trois femmes ont été exclues de la recherche, car elles ont accouché par césarienne non prévue.

Les nouveau-nés âgés de moins de six semaines, provenant du Groupe Expérimental et contrôlé, ont été évalués. La praticienne chargée de les examiner ne savait pas à quel groupe ils appartenaient. L'examen du nouveau-né a suivi un protocole d'évaluation déterminé à l'avance et a été documenté par l'évaluatrice sur un formulaire rédigé pour cette étude. Une analyse statistique des résultats des deux groupes de nouveau-nés a été faite afin de déterminer s'il existe une différence significative entre les deux groupes.

Les résultats ont démontré que les groupes de mères étaient consistants, car la moyenne d'âge était 32 ans. Il n'y avait pas de différence significative à l'analyse des questionnaires sur l'accouchement qui avait été rempli par les mères des 2 groupes. Alors, les deux groupes étaient homogènes.

Les données de l'examen du nouveau-né ont démontré une importante différence entre les mères traitées (Groupe Expérimental) et les mères non traitées (Groupe Contrôle). Dans le Groupe Contrôle, il y avait statistiquement d'importantes lésions dans presque chaque os crânien qui avait été évalué. Les os inclus étaient : le frontal et pariétal droit en lésion d'extension ; temporal droit en lésion ; condyle occipital droit en lésion de flexion ; le temporal gauche chevauchait latéralement ; l'écaille de l'occiput en lésion ; l'éthmoïde en lésion et compacté. Il y avait une compaction antérieure du crâne et la forme crânienne était anormale dans le groupe contrôle. L'œil droit était plus petit. À l'extrémité caudale dure-mérienne, il y avait un sacrum en lésion et compacté et il n'y avait pas de mouvement du sacrum entre les iliums dans le Groupe Contrôle. La motilité sacrale était en expiré. Le seul résultat anormal de l'importance statistique du Groupe Expérimental était le SSB qui était en lésion de « sidebending » rotation gauche. Même s'il n'y avait statistiquement pas de différence entre les 2 groupes, le groupe des mères traitées avaient un accouchement 4 heures plus court que le groupe non traité.

Ces résultats supportent le modèle ostéopathique que les pressions appliquées sur le crâne et le sacrum du bébé sont en relation avec la structure et la fonction du corps de la maman. Une intervention ostéopathique bénéficiera également au nouveau-né. Alors, ces résultats suggèrent un nouveau paradigme pour le protocole de traitement ostéopathique chez les femmes enceintes et qui vont à leur tour avoir une influence positive sur le nouveau-né.