

Aromatherapy massage for joint pain and constipation in a patient with Guillian Barré

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The following case study will look at the efficacy of aromatherapy massage in a patient diagnosed with Guillian Barré Syndrome admitted to an Intensive Therapy Unit. The pathophysiology of this disorder will be discussed, medical treatment will be outlined and adjuncts to conventional nursing care will be presented. Aromatherapy massage was used to complement the conventional nursing and medical treatment of joint pain and constipation. The Mead Model for nursing care was used for assessment and the plan of care devised from this. Evaluation of outcomes were incorporated into the implementation protocol to ensure positive outcomes were achieved. © 2001 Harcourt Publishers Ltd



Fig. 1 Carole Shirreffs.

CLIENT BACKGROUND AND PRESENTING PROBLEM

In order to protect patient confidentiality, the name of this patient has been changed and specific details regarding this patient's admission have been deliberately omitted.

Gary Blair, a 31-year-old taxi driver was admitted to the Intensive Therapy Unit (ITU)

for observation of his respiratory function, which progressed to a need for artificial ventilation. In the days preceding hospital admission, Gary had developed paraesthesia (tingling) in both feet and legs, with a progressive symmetrical weakness that eventually included both his arms. The resultant loss of power in his legs and arms was associated with an absence of deep tendon reflexes and difficulty distinguishing

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between sharp and blunt materials on his legs. No cerebellar signs were present. Prior to the onset of this weakness, he had complained of a flu-like illness that had caused him to vomit once. Gary had no history of foreign travel and he was not taking any medications. Examination of previous medical history revealed some cervical bone fractures following a road traffic accident some years earlier that had resolved on a recent cervical X-ray.

The clinical signs and symptoms that Gary presented with are well recognized, and diagnostic of Guillian Barré Syndrome (GBS) (Waldock 1995, Korinthenberg & Monting 1996). GBS was first described in 1916 by George Guillian, Jean-Alexandre Barré and Andre Strohl (Norrie 1992), in a report about two soldiers who developed a paralysis within a few weeks of each other. However, as far back as 1869, Octane Landry described cases where paralysis of the respiratory system were also noted (Norrie 1992). Studies have demonstrated that 75% of patient's develop the disease following an infection of either the respiratory or gastrointestinal tract. Winer (1994) states that 15% occur after infection with campylobacter jejuni. Other triggers include hepatitis, surgery and HIV. As many as 25% of cases will require the advent of assisted ventilation (Winer 1994).

Until recently, GBS was considered to be a single disorder and was synonymously referred to as Acute Inflammatory Demyelinating Polyneuropathy (AIDP) (Ashbury & McKhann 1997). Other pathologies of this disease have now been discovered, with Feasby and colleagues (1986) the first to describe axonal GBS. The motor sensory axonal type is noteworthy for its severity and poor recovery, and a pure motor axonal form was discovered in North China (Yuki et al. 1993). In each type, a trigger of unknown cause destroys the myelin sheath around the axon of nerves in the peripheral nervous system (PNS) (Morgan 1991). The polyneuropathy may happen in either of the following two ways: 1) The infiltration of a virus into the spinal and occasionally the cranial nerve roots; and 2) as an autoimmune response precipitated by toxic or infectious agents (Waldock 1995). In the latter, sensitized white blood cells infiltrate the PNS and produce demyelination, oedema and inflammation. The heavily myelinated peripheral nerves are more affected than the lightly myelinated fibres. Demyelination slows down the conduction of the nerve impulses. Lesions can develop in the PNS and result in compression of nerve roots, segmental demyelination and axonal degeneration. The variety in the types of conditions collectively known as GBS is due to the location and extent of demyelination and inflammation throughout the PNS.

In the UK, 300–600 people are affected each year (McMahon-Parkes & Cornock 1997). Both sexes are affected, with slightly more men than women, and all age groups, although peaks do occur in young adults and the 40–70 year-old age group. No predisposing genetic susceptibility has been discovered. Progression of the paralysis can continue up to 4 weeks from onset, after which time recovery will take place. The myelin sheath is able to regenerate itself and regrowth of severed axon and restoration of function is possible in peripheral nerves. In severe cases, recovery can take up to 18 months, but 85% of cases recover within 4–6 months (Waldock 1995). Mortality is 5–8% and is usually due to complications of immobility, infection and/or autonomic disturbances (Winer 1994). Autonomic disturbances include hypertension in 6–61% of cases, hypotension in 2–10% of cases, sinus tachycardia in 37% and vagally mediated arrhythmias in 35% (Norrie 1992).

Treatments to decrease the severity of the acute phase and shorten the recovery period have been researched (French Cooperative Group on Plasma Exchange in Guillian Barré Syndrome 1997, Hughes 1993, Van der Meche & Schmitz 1992). In the 1960s, the drug of choice was methyl prednisolone. Methyl prednisolone is a steroid, and therefore an immunosuppressant. Based on the premise that GBS is partially an autoimmune disease, the rationale was that steroids would suppress the autoimmune response. However, a study in 1978 showed that steroids did not speed up recovery and that they may even interfere with macrophage function (Hughes 1993). The macrophages are required to clear myelin debris, a pre-requisite for remyelination.

In the mid 1980s, three large clinical trials independently demonstrated a beneficial effect on the rate of recovery and improvements in the degree of recovery following plasma exchange (PE), if commenced in the first 2 weeks of the onset of the disease (French Cooperative Group on Plasma Exchange in Guillian Barré Syndrome 1997). Plasma exchange removes the acute phase proteins responsible for the demyelination and replaces them with albumin. Albumin is produced by the liver and is needed to bind to proteins such as hormones and nutrients. Later research found that two exchanges were better than one for mild GBS, four exchanges better than two for moderate GBS, and six confer no further benefits than four for severe GBS (French Cooperative Group on Plasma Exchange in Guillian Barré Syndrome 1997). The major drawbacks of PE are the overall expense of the procedure and the infection risk due to the requirement of an invasive central venous catheter.

Research has demonstrated that giving intravenous immunoglobulin (IVIG) is as effective as PE for the treatment of GBS (Van der Meche & Schmitz 1992), but the combination of both treatments was not significantly better than either one. At present the preferred treatment is IVIG to boost the antibody response of the body with less potential complications.

Other core drug treatments required for GBS would include: heparin (as anticoagulation is necessary to prevent deep vein thrombosis from prolonged immobility), antibiotic therapy (to prevent infections), inotropic support (for cardiovascular instability due to the autonomic disturbances) and analgesia. The distressing pain produced as a result of paraesthesia is present in 33% of cases, and may be controlled with amitriptyline, phenytoin, carbamazepine and aspirin. How much pain the patient feels is difficult to assess, because in many cases the patient's facial muscles are paralysed and therefore they cannot communicate their distress. Joint discomfort may be treated with opiates, for example alfentanil, along with the use of passive 'range of joint' movements, heat/cooling pads, TENS machines and also massage.

Autonomic disturbances can cause disordered gastrointestinal motility (Kankam & Sallis 1997). Constipation may occur as a result of paralytic ileus, the immobility of the patient and the opiate administration. It may be prevented by giving regular stool softeners and enemas. Meticulous

bowel care should be given from admission with stool softeners, prokinetic agents, laxatives and enemas as required (Hahn 1996). Abdominal massage may also be given to facilitate defecation.

AIM OF TREATMENT

The aim of the aromatherapy massage was to complement the conventional nursing and medical treatment of joint pain and constipation in a patient presenting with Guillain-Barré Syndrome.

ASSESSMENT OF PATIENT SUITABILITY FOR AROMATHERAPY MASSAGE IN THE ITU

Patients remain conscious throughout the various stages of GBS, and are therefore able to provide feedback regarding the perception of massage. This contrasts with central nervous system disorders, which may be unpredictable and involve altered conscious levels, making it more difficult to assess the safety of massage (Table 1). Recovery time is extensive, and the patient's day in ICU is long and repetitive as service-centred routines are adhered to. Aromatherapy massage for patients with GBS gives them something pleasant to look forward to, as

Table 1 Assessment data for patient suitability

ASSESSMENT

Demographic profile

Name:

Age:

Sex:

Unit no:

ITU consultant

Hospital consultant

Past medical history:

Family history:

Diagnosis:

Medications:

Allergies:

Exclusion criteria: Past medical history of psychiatric illness, malignancy, sensitive skin and allergies. Acute CNS pathology, sepsis, hepatic failure, acute and chronic renal failure. Avoid massaging during the first 24 h post-operatively, over bruises, varicose veins and recent surgical scars. Patients who have been prescribed beta-blockers

Table 2 The Mead Model

Assessment of condition – identification of problems

1. Physical
 - a) Respiratory
 - b) Cardiovascular
 - c) Pain/sedation
 - d) Neurology
 - e) Nutrition/hydration
 - f) Elimination
 - g) Hygiene/mobility/wound care
2. Psychological/social
3. Circumstantial

Doctor's signature.....

Relative's signature.....

well as offering a range of potential benefits. Patients with GBS are prone to depression, and it is now recognized that aromatherapy can promote psychological well-being (Dunn 1990, Stevenson 1992, Tseng 1993).

PATIENT ASSESSMENT

The incorporation of aromatherapy (massage only) into the care of GITU patients in this large NHS Trust hospital has taken approximately 5 years. This process of change has followed a bottom-up approach, which has been supported by both senior medical and nursing staff. Specific policy documentation and guidelines for the use of aromatherapy massage in the GITU have yet to be completed.

The physical and psychological assessment of the patient for the purposes of this case study was collected using the Mead Model for nursing (Table 2) (McClune & Franklin 1987). An additional record was kept, to be stored in the patient's case notes, which detailed the specifics of the blend used, the rationale for each essential and carrier oil chosen, the technique followed and the duration of the massage and the parts of the body massaged. Evaluation of the massage was recorded on the nursing evaluation sheet.

Prior to commencement, permission was obtained from Gary to explore the benefits of massage as a complementary treatment for his pain and constipation. The medical staff were included in this discussion to ensure that they were supportive of this plan of care.

CARE PLAN

Two different blends of essential oils were used: an 'analgesic' blend for the joint pain, and a

'stimulatory' blend for the constipation. The oils, carriers and essential, were made by Tisserand and purchased from Aromatherapy Products Ltd. Tisserand oils were chosen because the company supplying these oils could provide health and safety data for each of the oils. Tisserand are also well known for their high standard of quality oils.

Although there is a potential for interaction between the medical drugs used to treat GBS and the aromatherapy oils at a molecular level, no such case has been reported. However, there have been observations of a synergistic reaction at the level of effect in some cases (e.g. relaxation may be enhanced). It must also be recognized that the dose of essential oil absorbed by the body is negligible (Tisserand 1986). Therefore, all essential oils chosen were of the non-toxic, non-irritating, non-sensitizing variety, and were used in low concentrations.

The 'analgesic' blend consisted of essential oils of *pelargonium graveolens* (geranium), *lavandula angustifolia* (lavender) and *anthesis nobilis* (roman chamomile). The 'stimulatory' blend contained essential oils of *citrus limon* (lemon), *foeniculum vulgare var.dulce* (sweet fennel), *citrus paradisi* (grapefruit), *piper nigrum* (blackpepper) and *mentha piperita* (peppermint). Table 3 shows the main chemical constituents of each of the chosen essential oils, and a therapeutic property attributed to each.

Both blends were made up to a 5% concentration, and the carrier oil of each was grapeseed. Patients with GBS tend to sweat excessively due to autonomic disturbances (Morgan 1991). Gary had oily skin, so this light textured carrier oil was the ideal dilutant for these essential oils. The frequency of administration was dictated by Gary. Some patients with GBS become hypersensitive to touch (McMahon-Parkes & Cornock

Table 3 The essential oils

Common name	Chemical constituent	Therapeutic property
geranium	citronellol	anti-inflammatory
lavender	linalyl acetate	analgesic
roman chamomile	esters of angelic and tiglic	analgesic
lemon	limonene – 70% terpenes	carminative
sweet fennel	anethole 50–60%	laxative
grapefruit	limonene 90%	digestive
black pepper	monoterpenes – 80%	laxative
peppermint	menthol 48%	carminative

Table 4 Plan of treatment

Essential oils				
Carriers Oils:				
Concentration of Blend:				
Position of invasive monitoring lines and parts of body massaged:				
Technique:				
Duration:				
Vital signs				
Pre-therapy:	BP	PULSE	RESP	TEMP
Post-therapy:	BP	PULSE	RESP	TEMP
Nurse aromatherapist's signature.....				
Date.....				

1997), so to avoid further distress by massaging on a 'bad' day Gary was allowed to choose the times he felt able to tolerate touch. He requested the massage treatments because he felt that they were beneficial. He believed they kept his bowel moving and would reduce the loss of structure to his lower limb muscles. As a marathon runner, he was very aware and concerned about loss of muscle tone. However, at times the hypersensitivity was so intense that Gary was not able to even consider touch and massage was not attempted on these days. As a result, the frequency of treatments turned out to be almost every third or fourth day.

The blended treatment was stored in a locked, cool, dark cupboard for up to 14 days. This reduced the time involved blending the oils, and also meant that Gary's wife had access to a ready-made blend. Gary's wife was encouraged to participate in the massage sessions. It is recognized that the patient and family cannot be considered as separate entities during illness, and that in times of crisis their bond is even more close (McIvor & Thompson 1988). The emotional and functional state of the family unit may affect the response for the patient to treatment, and the family constitutes the parameters within which illness occurs and resolves (Jones & Dimond 1982). Recovery from GBS takes time.

If and when a patient is considered fit to return home, it is the family who will be involved with the patient's care. If no consideration of this happens while the patient is in hospital, then the family care-giver may become anxious, lacking in confidence and unsure of their ability to care for their loved one (Liddle 1988). As well as learning a new skill that could be continued throughout Gary's admission and beyond, participating in the massage meant Mrs Blair had something purposeful to do during visiting time, reducing the impact of the technological environment. Using the massage, Mrs Blair was able to express her love and concern for her husband.

The technique used to administer the analgesic blend involved gentle effleurage around the shoulder and knee joints building up slowly to light kneading movements and frictions. Fifteen minutes were allocated for each joint, concluding with tentative passive range-of-movement exercises once the muscles had been warmed and 'worked'. Promotion of bowel action involved a 30 min abdominal/colonic massage (Table 4).

GARY'S RESPONSE

The discomfort that Gary felt, which he described as 'having restless leg syndrome all over

your body' was relieved by the combination of massage, passive exercises and repositioning of his joints. Gary was concerned about the amount of muscle loss, particularly in his lower limbs, and enjoyed the leg massages and exercises. He felt as if the massage was in some way slowing down the muscle loss.

Despite regular aperients, Gary had continued to have problems with constipation. The stimulation of the abdominal/colonic massage often resulted in defecation and he would request this treatment. Gary felt that everything possible was being done to keep his bowel moving.

During the course of his stay in ITU, Gary became an avid fan of aromatherapy massage and would tell his family and the staff how helpful he found these treatments. Gary's father was particularly enthusiastic about the massage and this contributed to a positive working relationship between staff and family.

AUTHOR'S REFLECTIONS

The severity of GBS in Gary's case would have benefited from a daily massage of his whole body, followed by passive range of movement exercises to all his joints in order to relieve discomfort and maintain the integrity of his joints and bowel motility. However, this was not possible due to the hypersensitivity of touch experienced by Gary.

As a result of having had the privilege to carry out this case study and explore with Gary the use of aromatherapy massage in a patient with GBS, the author has gained greater insight into the type of pain experienced by patients with GBS. Furthermore, she has gained an understanding of how concerned patients with GBS are with regard to the effects of prolonged immobility on their body, in particular the distress caused by constipation.

ABOUT THE AUTHOR

A research study by the author explored the patient's perceptions of pain relief, relaxation and sleep following an aromatherapy massage post-coronary artery bypass grafting. The results of this work were presented at a nursing conference: Ideas and Innovations in Critical Care, 17 and 18 October 1997, Birmingham, UK. Interest in aromatherapy massage and its potential use to promote the psychological and physiological well-being of the patient in the intensive therapy unit dates back to 1992.

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