

Post-surgical Complications Treated by Acupuncture and Chinese Herbal Medicine

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Abstract

Post-surgical complications involve symptoms remaining after an operation, or else occur where an operation fails to completely remove the appropriate pathological physical tissue. In such cases acupuncture is able to promote self-healing and regulate physiological processes, whilst herbal medicine can reduce inflammation, target specific symptoms and facilitate healing. In this paper the authors present four cases involving post-surgical complications that were successfully treated with traditional Chinese medicine.

Surgical resection is an important method of treating disease in Western medicine (WM). With a correct diagnosis and skilled intervention, a condition can be resolved simply by surgically removing the appropriate pathological physical tissue. Sometimes symptoms do not resolve post-operatively, however, and complications can develop. In such cases another operation is often undesirable and both the surgeon and patient wish to avoid further physical trauma. It is in these cases that traditional Chinese medicine (TCM) can be a suitable treatment option. By assessing the individual needs of each patient, herbal medicine, acupuncture or a combination of both can be used to reduce inflammation, strengthen the patient's general constitution and promote healing and recovery.

TCM has shown some success in treating complications following a variety of surgical procedures across the fields of general surgery,¹ orthopaedics^{2, 3} and gynaecology,⁴ amongst others. Here we present four cases of post-surgical complications that were successfully treated with TCM, followed by discussion and analysis.

Case 1: Discharge and ascites caused by portal hypertension and hypoproteinaemia following liver tumour resection

JB, a 47-year-old female patient, presented four months after undergoing surgical resection of multiple liver tumours complaining of abdominal pain, weight loss, amenorrhoea and continuous discharge from the sites of the drainage tubes that had been inserted into her chest and abdomen. Three years previously JB had been diagnosed with primary liver cancer - as confirmed by liver biopsy - after complaining of right upper quadrant pain, depression, anxiety and insomnia. There had been multiple tumours concentrated around the portal vessels, the largest

measuring six by seven centimetres and the smallest measuring one centimetre square; this had made resection difficult and dangerous, and thus she was not given any treatment. JB had suffered from breast cancer thirteen years previously, although the liver tumours were thought to be unrelated. As she had previously experienced benefits from TCM during her breast cancer treatment, she returned for treatment of the liver cancer. She was given acupuncture and herbal medicine to move Liver qi and relieve blood stasis, and after two years of TCM treatment her general condition had improved - her complexion was healthy, her appetite was good, her menstrual cycle was regular and she had regular bowel movements. The tumours did not reduce in size, however, but actually grew slightly bigger. She was therefore referred back for WM treatment, and her hepatobiliary surgeon decided to operate in September 2009. Six tumours of various sizes were resected and shown by histological tests to be neuroendocrine in nature. Due to the large amount of fluid produced by the wounds, chest and liver drains were inserted on her right side two months after surgery.

When JB returned for TCM treatment four months after the operation she reported abdominal distension and pain, breathlessness and dizziness on exertion, nausea, tiredness, anorexia, poor sleep, weight loss (over 10 kilogrammes since the operation - her BMI was low), amenorrhoea and bilateral swelling of the legs. She constantly had to lean towards her left side and was unable to lie supine due to pain at site of the chest drain where inflammation and infection was affecting the bottom of the right lung. She also had to move very slowly, as movement exacerbated the pain in her abdomen and at the drain sites. There was generalised abdominal distension and tenderness on palpation, with shifting dullness heard with a stethoscope on percussion (confirming the presence

of ascites). The right-sided chest drain was draining pale yellow fluid (over 100 millilitres per day) and there was splenomegaly. Her tongue was pale and plump with a slippery white coat, and her pulse was wiry and fine.

WM diagnosis:

- Ascites and leg oedema secondary to portal hypertension
- Hypoproteinaemia

TCM diagnosis:

- Qi and yang deficiency of the Spleen and Kidney
- Excess dampness and internal fluid accumulation

As JB could not comfortably lie supine, acupuncture was not used and she received only herbal medicine. An integrated approach to treatment was used, in which TCM and WM treatment regimens were divided into three stages, as follows:

Stage 1

The initial WM treatment principles were to correct hypoproteinaemia and reduce portal hypertension, whilst the TCM treatment principles focused on reinforcing qi, nourishing blood, eliminating fluids and relieving stasis. The prescription was based on a mixture of *Huang Qi Bu Xue Tang* (Astragalus Decoction to Nourish the Blood) to strengthen the central qi and blood, and *Wu Ling San* (Five-Ingredient Pill with Poria) to remove accumulated fluid from the wound and abdomen. The prescription was as follows:

- Huang Qi (Astragali Radix) 30g and Dang Gui (Angelicae sinensis Radix) 10g: the large dose of Huang Qi strengthens the central (*zhong*) qi, whilst Dang Gui nourishes blood and works together with Huang Qi to strengthen the upright (*zheng*) qi.
- Yi Yi Ren (Coicis Semen) 30g, Fu Ling (Poria, changed from Zhu Ling in the original formula, with an increased dose) 10g and Ting Li Zi (Lepidii/Descurainiae Semen) 10g all drain excessive fluid. Ting Li Zi was chosen as it enters the Lung channel.
- Gui Zhi (Cinnamomi Ramulus) 10g stimulates the yang qi in order to move fluids.
- Hou Po (Magnoliae officinalis Cortex) 10g and Zhi Shi (Aurantii Fructus immaturus) 10g move qi in the abdomen to help to move fluids.
- Shan Zha (Crataegi Fructus) 10g, Sha Ren (Amomi Fructus) 10g and Shen Qu (Massa medicata fermentata) 10g harmonise Stomach qi and revive the appetite.
- Zhi Gan Cao (Glycyrrhizae Radix preparata) 5g protects the Stomach and harmonises the whole prescription.

The herbs were decocted and taken twice a day. Additionally one 10 millilitre bottle of Ren Shen (Ginseng Radix) extract containing 3800 milligrammes of Ren Shen

was prescribed twice daily to further strengthen the qi.

After commencing herbal treatment JB reported a gradual decline in abdominal pain and distension, a return of her appetite and a reduction in the amount of fluid discharge (down to eight to ten millilitres per day). After six weeks of treatment the fluid output had reduced enough for the chest drain to be removed.

Stage 2

By this point, JB had regained weight, started menstruating again, had normal urinary and bowel functions, and experienced a significant reduction in the amount of fluid in her abdomen and legs. She still suffered from pain, swelling and mild discharge around the drainage site at the bottom of lung, however, and occasionally felt feverish. Her tongue was light red with a white coat, and her pulse was wiry and fine. At this point a seven-day course of antibiotics was prescribed by her GP for the infection, and a district nurse was coming to change her dressings every other day. During this second phase of treatment the WM treatment principles were to reduce local inflammation and strengthen the patient's general condition, whilst the TCM treatment principles were to regulate Liver qi, tonify Spleen qi, eliminate excessive fluid, reduce blood stasis and clear toxic heat. The TCM prescription was based on a mixture of *Xiao Chai Hu Tang* (Minor Bupleurum Decotion) and *Wu Wei Xiao Du Yin* (Five-Ingredient Drink to Eliminate Toxins), as follows:

- Chai Hu (Bupleuri Radix) 10g regulates qi, especially of the Liver and abdomen.
- Huang Qin (Scutellariae Radix) 10g and Chuan Lian Zi (Toosendan Fructus) 10g clear heat from the Lung and Liver.
- Ban Xia (Pinelliae ternatae Rhizoma) 10g resolves stagnant phlegm and harmonises the Stomach.
- Jin Yin Hua (Lonicerae Flos) 10g, Pu Gong Ying (Taraxaci Herba) 10g and Chi Shao (Paeoniae Radix rubra) 10g detoxify and clear heat from the blood.
- Huang Qi (Astragali Radix) 15g strengthens the upright qi.
- Zhu Ling (Sclerotium Polypori Umbellati) 10g drains any remaining fluid.
- Sha Ren (Amomi Fructus) 10g, Shan Zha (Crataegi Fructus) 10g and Zhi Gan Cao (Glycyrrhizae Radix preparata) 5g harmonise the Stomach, promote appetite and harmonise the whole prescription.

The above herbs were decocted and taken twice daily.

Stage 3

By this time the wound around the drain-site had completely healed and all the excess fluid in JB's abdomen and legs had disappeared. However, she had developed a cough and breathlessness as a result of the fibrosis at the bottom of the lung, and splenomegaly was again

noticed on ultrasound, which was caused by the portal hypertension. The WM treatment principles were therefore to support gastrointestinal function (involving promoting circulation between the intestines and the Liver in order to reduce portal hypertension), reduce the production of phlegm in the lungs and support general recovery. The TCM treatment principles were to strengthen the Spleen and Kidney, eliminate dampness and resolve blood stasis. The TCM prescription was based on a combination of *Xiang Sha Liu Jun Zi Tang* (Six-Gentlemen Decoction with Aucklandia and Amomum) and *Wu Ling San* (Five-Ingredient Pill with Poria).

- Xiang Fu (Cyperus Rhizoma) 10g and Sha Ren (Amomi Fructus) 10g regulate Stomach qi and promote appetite.
- Huang Qi (Astragalus Radix, changed from Dang Shen [Codonopsis Radix] in the original formula) 30g, Bai Zhu (Atractylodes macrocephala Rhizoma) 10g and Fu Ling (Poria) 10g strengthen central qi.
- Shan Zha (Crataegi Fructus) 10g and Chao Mai Ya (dry-fried Hordei Fructus germinatus) 10g harmonise Stomach qi.
- Hou Po (Magnoliae officinalis Cortex) 10g and Zhi Qiao (Aurantii Fructus) 10g move qi in the abdomen.
- Yan Hu So (Corydalis Rhizoma) 10g treats chest and abdominal pain.
- Yi Yi Ren (Coicis Semen) 30g and Gui Zhi (Cinnamomi Ramulus) 8g stimulate yang qi to move accumulated dampness.
- Dang Gui (Angelicae sinensis Radix) 10g and Chi Shao (Paeoniae Radix rubra) 10g nourish yin and blood and soften blood stasis in the Lung and Liver.
- Zhi Gan Cao (Glycyrrhizae Radix preparata) 5g harmonises the other herbs, relaxes the Stomach and regulates the whole prescription.

All of the herbs were decocted and taken twice daily. Additionally one 10 millilitre bottle of Ren Shen (Ginseng Radix) extract containing 3800 milligrammes of Ren Shen was prescribed twice daily to further strengthen the qi.

After receiving TCM treatment for six months the patient recovered completely.

Case 2: Upper abdominal pain caused by residual inflammation following laparoscopic cholecystectomy

PN, a 53-year-old female yoga teacher, presented with a three-month history of constant right upper quadrant (RUQ) pain that had started following a laparoscopic cholecystectomy. Prior to surgery she had suffered from recurrent RUQ pain, belching, nausea and abdominal distension and, after confirmation by ultrasound, she was diagnosed with gallstones. Although she recovered quickly from the surgery, she experienced no relief of the

pain. She also suffered from hot flushes, fatigue, night sweats, insomnia, constipation, depression, anxiety and irritability. Analgesia prescribed by her GP (co-codamol) only worsened her constipation. The combination of these other symptoms seemed to exacerbate her RUQ pain, which is why she decided to come for TCM treatment.

On examination PN's abdomen was distended, soft and tender in the RUQ, but without rebound tenderness. Murphy's sign (an abdominal diagnostic technique that indicates gall bladder disease) was positive and there was generalised mild abdominal tenderness and quiet bowel sounds on stethoscopic diagnosis. There was no jaundice. Her tongue was deep-red with little coating and her pulse was wiry.

WM diagnosis:

- Post-cholecystectomy syndrome leaving inflammation in the gall bladder fossa, complicated by possible gastritis/duodenitis.
- Menopause.

TCM diagnosis:

- Accumulation of qi in the Liver and Spleen obstructing the passage of abdominal qi with toxic heat accumulation. The TCM treatment principles were therefore to regulate the qi of the Liver and Spleen, clear heat and detoxify.

Acupuncture

- Baihui DU-20 with even reinforcing-reducing technique.
- Jiuwei REN-15, Tianshu ST-25, Yanglingquan GB-34, Zulinqi GB-41, Zusanli ST-36, Neiting ST-44, Waiguan SJ-5, Hegu LI-4 and Taichong LIV-3 with reducing technique.
- Yinlingquan SP-9, Sanyinjiao SP-6 and Taixi KID-3 with reinforcing technique.

Acupuncture treatment was given once weekly.

Herbal medicine

The herbal prescription was based on a combination of *Da Chai Hu Tang* (Major Bupleurum Decoction) and *Yin Chen Hao Tang* (Virgate Wormwood Decoction) to regulate Liver and Stomach qi and clear heat and dampness from the Liver and Gall Bladder:

- Chai Hu (Bupleuri Radix) 10g, Yin Chen (Artemisia Scopariae Herba) 10g and Chuan Lian Zi (Toosendan Fructus) 10g regulate Liver qi and clear heat and dampness.
- Zhi Zi (Gardeniae Fructus) 10g and Da Huang (Rhei Radix et Rhizoma) 10g (added towards the end of the decocting process) detoxify and purge the intestines.
- Zhi Qiao (Aurantii Fructus) 10g, Hou Po (Magnoliae officinalis Cortex) 10g and Sha Ren (Amomi Fructus) 10g regulate Stomach qi and qi in the abdomen.
- Dang Gui (Angelicae sinensis Radix) 10g, Chi Shao (Paeoniae Radix rubra) 10g and Yan Hu So

(Corydalis Rhizoma) 10g relax Liver qi and ease upper abdominal pain.

- Hua Shi (Talcum) 15g eliminates dampness.
- Huang Bai (Phellodendri Cortex) 10g and Zhi Mu (Anemarrhenae Radix) 10g clear heat and nourish Kidney yin.
- Gan Cao (Glycyrrhizae Radix) 5g calms the Stomach and harmonises the whole prescription.

All of above herbs were decocted and taken twice daily.

After two weeks of treatment there was a significant reduction in the RUQ pain. In addition her bowel movements became regular, the hot flushes disappeared and her sleep became peaceful. Treatment was then adjusted to acupuncture once every two weeks and patent herbal medicine (*Da Chai Hu Tang Wan*, 15 pills twice daily, and *Zhi Bai Di Huang Wan* [Anemarrhena, Phellodendron and Rehmannia Pill], one pill twice daily). After four weeks the RUQ had completely disappeared and the menopausal symptoms were fully under control.

Case 3: Lower abdominal pain following caesarean section

HD, a 29-year-old female school teacher, presented with a two month history of lower abdominal pain following caesarean section (performed due to failure of the foetal head to engage and the small maternal pelvic size). The operation was successful and mother and baby were discharged from hospital after five days. The patient breast-fed her baby and resumed household chores soon after her discharge, but one week post-discharge began to experience constant dull lower right abdominal pain. Her bowel movements remained regular but her appetite became poor. In addition, her sleep was poor and she felt tired and restless. She was prescribed co-codamol by her GP which made her constipated, and led her to seek TCM treatment.

On initial examination, the patient's abdomen was found to be soft, with some swelling and mild tenderness in the left lower quadrant. There was tenderness in the right lower abdomen around the wound site, but without rebound or guarding. Gurgling bowel sounds were audible in the abdomen. Her tongue was light red with little white coating and her pulse was wiry.

WM diagnosis:

- Extension of operative wound.
- Mild local peritonitis.

TCM diagnosis:

- Accumulation of damp heat with blood stasis obstructing qi in the abdomen.

The TCM treatment principles were to remove dampness, clear heat, regulate abdominal qi and relieve stasis.

Acupuncture

- Baihui DU-20 with even reinforcing-reducing technique.
- Tianshu ST-25, Zusanli ST-36, Neiting ST-44, Yanglingquan GB-34, Zulinqi GB-41 and Waiguan SJ-5 with reducing technique.
- Yinlingquan SP-9, Sanyinjiao SP-6, Taixi KID-3 and Rangu KID-2 with reinforcing technique.

Acupuncture treatment was given once per week.

Herbal medicine

The herbal prescription was based on *Lan Wei Qing Hua Tang* (Clear and Transform Appendicitis Decoction), as follows:

- Chai Hu (Bupleuri Radix) 10g, Yin Chen (Artemisia Scopariae Herba) 10g and Chuan Lian Zi (Toosendan Fructus) regulate qi in the Liver and abdomen and clear heat from the Liver and Gall Bladder.
- Mu Dan Pi (Moutan Cortex) 10g, Jin Yin Hua (Lonicerae Flos) 15g and Pu Gong Ying (Taraxaci Herba) 10g detoxify and clear blood heat.
- Zhi Qiao (Aurantii Fructus) 10g and Hou Po (Magnoliae officinalis Cortex) 10g regulate qi in the Stomach and abdomen.
- Da Huang (Rhei Radix et Rhizoma) 10g (added later during the decocting process) purges the stool and moves blood stasis.
- Chi Shao (Paeoniae Radix rubra) 10g relaxes abdominal spasms and eases pain.
- Gan Cao (Glycyrrhizae Radix) 5g calms the Stomach and harmonises the whole prescription.

The above herbs were decocted and taken twice daily. After one week of treatment the patient resumed regular bowel movements and sleep patterns, and noticed a significant reduction in her lower abdominal pain. She was given another week of acupuncture and herbal medicine before the prescription was changed to the patent formulas *Da Chai Hu Tang Wan* (Major Bupleurum Decoction Pill - 15 pills twice daily) and *Jia Wei Xiao Yao Wan* (Augmented Rambling Pill - one pill twice daily), with ongoing weekly acupuncture.

After four weeks of treatment the patient recovered completely: she was free of abdominal pain, had regular bowel movements and peaceful sleep and felt full of energy. She continued to breast-feed and was able to return to work.

Case 4: Lower back pain with numbness and paralysis of the feet following lumbar discectomy

FJ, a 26-year-old female, presented with a four month history of constant lower back pain accompanied by numbness and paralysis of both feet that had started following a lumbar discectomy. She had previously been

diagnosed with prolapse of the L4/L5 intervertebral disc, which had caused recurrent back pain and progressively worsening symptoms in her legs and feet. As well as the post-operative lumbar pain, she also experienced numbness and coldness of the lateral aspect of both feet and bilateral weakness on dorsiflexion. She also had a history of some years of irregular menstruation (involving five to 15 days of menstrual bleeding and a cycle length of between 30 and 90 days), but without dysmenorrhea. When she presented for TCM treatment she had not had a period for two months, and had developed facial acne.

At her first appointment the patient was walking with a limp, with clear weakness of dorsiflexion and toe extension that was worse in her little toes. Both feet were cold and numb. There was a five centimetre scar in the lumbar region of her back (which had healed), and some tenderness on palpation along the lumbar spine. She had multiple papules consistent with acne on her face. Her tongue was light red with little white coating and her pulse was wiry and fine.

WM diagnosis:

- Nerve damage.
- Polycystic ovaries or polycystic ovarian syndrome (PCOS).

TCM diagnosis:

- Kidney qi and yin deficiency.
- Accumulation of dampness and stasis of blood.

The TCM treatment principles were to expel dampness, relieve stasis of blood, strengthen Kidney qi and nourish Kidney yin.

Acupuncture

- Baihui DU-20 with even reinforcing-reducing technique.
- Pishu BL-20 and Shenshu BL-23 with reinforcing technique.
- Baliao (Shangliao BL-31 to Xialiao BL-34), Zhibian BL-54 and Weizhong BL-40 with electro-stimulation (to give a strong reducing effect).
- Chengshan BL-57, Kunlun BL-60, Shenmai BL-62, Shugu BL-65 and Yingu KID-10 with reducing technique.
- Taixi KID-3, Zhaohai KID-6, Yinlingquan SP-9, Sanyinjiao SP-6, Zulinqi GB-41 and Xiashi GB-43 with reinforcing technique.

Acupuncture treatment with the above points was given once weekly.

Herbal medicine

The herbal prescription was based on a mixture of *Er Xian Tang* (Two-Immortal Decoction), *San Miao Wan* (Three Marvel Pill) and *Tao Hong Si Wu Tang* (Four-Substance Pill with Safflower and Peach Pit):

- Yin Yang Huo (*Epimedii Herba*) 20g, Xian Mao (*Curculiginis Rhizoma*) 10g and Ai Ye (*Artemisiae argyi Folium*) 10g warm the Kidney and uterus, agitate yang qi and excite the channels and collaterals.
- Sheng Di Huang (*Rehmanniae Radix*) 15g nourishes Kidney yin and essence.
- Cang Zhu (*Atractylodis Rhizoma*) 10g and Huang Bai (*Phellodendri Cortex*) 10g dry dampness and clear heat.
- Yi Yi Ren (*Coicis Semen*) 30g resolves dampness at the local wound and generally throughout the collaterals.
- Dang Gui (*Angelicae sinensis Radix*) 10g, Chi Shao (*Paeoniae Radix rubra*) 10g, Chuan Xiong (*Chuanxiong Rhizoma*) 10g, Tao Ren (*Persicae Semen*) 10g, Hong Hua (*Carthami Flos*) 10g and Yi Mu Cao (*Leonuri Herba*) 15g nourish and move blood to increase local circulation, promote nerve regrowth and regulate the menstrual cycle.
- Gui Zhi (*Cinnamomi Ramulus*) 3g stimulates yang qi and warms the uterus and the collaterals.
- Mu Gua (*Chaenomelis Fructus*) 15g and Ji Xue Teng (*Spatholobi Caulis*) 15g stimulate the muscles, joints and ligaments.
- Zhi Gan Cao (*Glycyrrhizae Radix preparata*) 5g calms the Stomach and harmonises the whole prescription.

The above herbs were decocted and taken twice daily for six doses per week.

After receiving acupuncture and herbal treatment for one month the patient's feet began to feel warmer and her lumbosacral pain disappeared. Her menses also returned and the acne cleared up. However, dorsiflexion was still weak, especially on the right side, and when the prescription was changed to patent herbs (for ease of consumption and affordability) the amenorrhoea and acne reappeared. The original treatment regimen was therefore reinstigated. After three more months of regular acupuncture and herbal decoctions the patient again showed signs of improvement. Soon after this she concluded her treatment, due to finishing the course she was studying, and continued treatment in her home-town.

Discussion

TCM treatment using acupuncture and herbal medicine can be effective in the treatment of post-surgical complications. The mechanism of action can be explained as follows:

1. Strengthening the constitution to promote self-healing

In case 1, portal hypertension led to ascites, oedema in both legs and splenomegaly. The loss of protein into third space fluids caused hypoproteinaemia, reduction in osmotic pressure and further fluid loss. This loss of protein contributed to the patient's general weakness and emaciation, and exacerbated her anorexia, fatigue, low mood, constipation and amenorrhoea. Natural recovery

was therefore limited and slow. By giving the patient herbal medicines that tonify qi, such as Huang Qi (Astragali Radix) and Ren Shen (Ginseng Radix), we were better able to regulate qi, expel fluids and remove blood stasis. Thus through TCM treatment the patient's constitution was strengthened and her appetite improved and metabolism increased. This facilitated correction of the hypoproteinaemia, which subsequently reduced the excess fluid and swelling of the legs.

2. Resolution of inflammation

A common reason for residual post-operative pain is the presence of local inflammation, sometimes accompanied by concurrent inflammation in tissues adjacent to the operative site. The main focus of inflammation will usually have been resected during the operation so that TCM can be used to treat any residual or associated inflammation. In the second stage of case 1, Chinese herbal medicine was used to reduce wound inflammation around the drain site. In case 2 TCM treatment was used to treat residual inflammation in the gall bladder fossa and gastritis/duodenitis. Acupuncture can also be used to generally regulate organ function, reduce inflammation and promote healing. Thus after an operation when there is multi-organ dysfunction or chronic inflammation, TCM constitutes an effective treatment modality.

3. Treatment of trauma following surgery

In case 3 the patient suffered an extension of the surgical incision that caused abdominal pain. This had been caused by excessive physical movement before the wound had sufficiently healed. Chinese herbal medicine effectively resolved the discharge and blood stasis - in biomedical terms producing an anti-inflammatory effect - whilst at the same time regulating gastrointestinal function and promoting healing. In cases where there are low levels of inflammation and trauma - especially where there is associated organ dysfunction - herbal medicine is an ideal therapeutic option, due to its ability to adjust multiple disorders simultaneously.

4. Supportive healing and rehabilitation of tissues where damage is not resolved by surgery

In case 4, although the protruding disc had been removed, the symptoms of nerve and vessel compression remained after the operation. In such cases it is important to introduce acupuncture as soon as possible after the operation - regardless of whether the nerves are believed to be permanently damaged, acupuncture can potentially promote recovery and regenerate the nerves and blood vessels by increasing local microcirculation. Although acupuncture is the

mainstay of treatment in these cases, in severe cases herbal medicine can be included in order to increase the therapeutic strength.

Conclusion

In conclusion, in cases where post-surgical complications arise, or where surgery is not successful in relieving symptoms, acupuncture and/or herbal medicine can be effective modalities to improve patients' recovery. ■

A version of this paper was presented at the First International Workshop on Integration of Traditional Chinese Medicine and Conventional Western Medicine at the University of Sheffield (UK) in December 2010.

Ms Dan Jiang graduated from Beijing University of Chinese Medicine in 1978, where she gained her Masters degree in medicine in 1987 and remained as a lecturer until 1991 whilst practising as a supervisor in affiliated hospitals. Since then, she has practised and taught TCM for 20 years in Sheffield and London (UK). She has published more than 20 papers and has worked as a clinical consultant to GP-TCM since 2010, a research consortium supported by the seventh framework programme of the European Union.

Dr. Lily Li graduated from the University of Cambridge School of Clinical Medicine in 2009, and currently works as a medical doctor at the Royal Free Hospital in London. She has undertaken clinical work experience with Ms Dan Jiang, where she assisted with biomedical diagnosis and treatment. Dr. Li amended this paper in its final version.

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