

ADCON Studies

HAND

A. Animal studies in chronological order:

1. Inhibition of peritendinous adhesions by Adcon-T/N/ in tenolysis.

Ahmad S, Hingson M, Maier K, Touhalisku D, Cocker G.

2nd Congress of Federation of European Societies for Surgery of the Hand,
Dublin, Ireland, June **1994**.

Summary: animal models show inhibition of adhesion and no effect on healing of nerves or surrounding tissues.

2. Inhibition of peritendinous adhesions by Adcon-T/N in a rabbit flexor tendon model.

Merle M, Dautel G, De Medinaceli L.

Institut Européen des Biomatériaux et de Microchirurgie, Vandoeuvre-lès-Nancy, France.

6th Congress of the International Federation of Societies for Surgery of the Hand, Helsinki, Finland, July 3-7, **1995**.

Summary: prospective, randomised, controlled, MRI and histology: significantly minimised post-operative adhesion in Adcon-T/N group.

3. Experimental effects of Adcon-T/N gel on the healing of blood vessels.

Lan G, de Medinaceli L, Merle M.

Institut Européen des Biomatériaux et de Microchirurgie, Vandoeuvre-lès-Nancy, France.

Presentation at the 65th Annual Meeting of the American Association of Neurological Surgeons, Denver, CO, USA, April **1997**.

Summary: no influence of Adcon-T/N application on the vascular permeability.

4. Reduction of extraneural scarring by Adcon-T/N after surgical intervention.

Petersen J, Russell L, Andrus K, MacKinnon M, Silver J, Kliot M.

Dept Neurological Surgery, University of Washington, Seattle, USA.

Neurosurgery **1996** May; 38(5):976-84.

Summary: study in rodents undergoing three types of surgical intervention on sciatic nerves with use of Adcon-T/N gel or a control gel: quantitative histological analysis revealed a statistically significant reduction in the amount of scar tissue. No nerve toxicity, no negative effect on suture healing.

5. Adcon-T/N reduces in vivo perineural adhesions in a rat sciatic nerve re-operation model.

Palatinsky EA, Maier KH, Touhalisky DK, Mock JL, Hingson MT, Coker GT.

Gliatech Inc., Cleveland, OH, USA.

J Hand Surg [Br] **1997** Jun;22(3):331-5

Summary: 38 rats, secondary bilateral lysis of adhesions (4 weeks after first sciatic neurolysis): one side Adcon-T/N, other side untreated. At 4 and at 8 weeks: no residual implant material, no adverse effects, but significant reduction in perineural fibrosis.

6. The safety of Adcon-T/N in tendon reconstruction and microvascular surgery.

Preclinical studies reports seminars **1997**. Gliatech Inc., Cleveland, OH, USA.

Effect of Adcon-T/N on peritendinous scar in a chicken flexor transection and repair model.

Summary: study in chicken tendons showing that Adcon-T/N did not inhibit the mechanical strength of tendon healing. No adverse events.

Effect of Adcon-T/N on perivascular fibrosis in a rat double blood vessel transection and repair model.

Summary: Femoral artery and vein model in rats: healing of anastomotic sites on small size blood vessels was not affected: Adcon-T/N can be safely used in complex microsurgical repair of neurovascular structures.

B. Human studies: in reverse chronological order

1. Efficacy of Adcon-T/N after primary flexor tendon repair in zone II: a controlled clinical trial.

Golash A, Kay A, Warner JG, Peck F, Watson JS, Lees VC.

Department of Plastic Surgery, Wythenshawe Hospital, Wythenshawe, Manchester, UK.

J Hand Surg (Br) **2003**, Apr 28(2): 113-5

Summary: prospective, double-blind, randomised, controlled trial, 45 patients with 82 flexor tendon repairs in 50 digits. Time to achieve final range of motion was significantly shorter in Adcon treated patients. Rupture rate (esp late) was higher in Adcon patients but this was not significant.

2. The use of Adcon-T/N after repair of zone II flexor tendons.

Liew SH, Potokar T, Bantick GL, Morgan I, Ford C, Murison MS.

Welsh Center for Burns and Plastic Surgery, Morriston Hospital, Swansea, UK
Chir Main **2001** Oct; 20(5): 384-7

Summary: double-blind, randomised trial in 59 patients(Adcon-T/N vs control), early mobilisation. At 6 months, better PIP motion in Adcon group.

3. Treatment of recurrent peripheral nerve entrapment problems: role of scar formation and its possible treatment.

McCall TD, Grant GA, Britz GW, Goodkin R, Kliot M.

Dept Neurological Surg, University of Washington School of Medicine, Seattle, USA.

Neurosurg Clin N Am **2001** Apr; 12(2): 329-39

Summary: retrospective review: prolonged clinical improvement in 67% of patients treated with Adcon-T/N after re-operation of a peripheral nerve versus 50% in the group not treated with Adcon-T/N at re-operation.

4. The effectiveness of Adcon-T/N, a new anti-adhesion barrier gel, in fresh divisions of the flexor tendons in zone II.

Mentzel M, Hoss H, Keppler P, Ebinger T, Kinzl L, Wachter NJ.

Dept Traumatology, Hand- and Reconstructive Surgery, University of Ulm, Germany.

J Hand Surg [Br] **2000** Dec; 25(6):590-2

Summary: prospective, randomised, 30 patients with fresh trauma of the flexor tendons in zone II of the hand: excellent results at 12 weeks in 15/16 Adcon-T/N treated patients versus 12/14 control but no statistically significant difference of total active motion and extension lag between the groups.

5. The use of Adcon-T/N glycosaminoglycan gel in the revision of tethered scars.

Boyce DE, Bantick G, Murison MS.

West Midlands Regional Plastic and Jaw Surgery Unit, Wordsley Hospital, Stourbridge, West Midlands, UK.

Br J Plast Surg **2000** Jul;53(5):403-5

Summary: excellent results in recurrent subdermal scar tethering by instilling Adcon-T/N in the plane between the skin and the underlying structures.

6. Adcon-T/N as an adjuvant in tendon transfers in tetraplegia.

Gagliano C, Della Rosa N, Leti Acciaro A, Caserta G, Landi A.
S.C.Chir Mano e Microchirurgia, Azienda Ospedaliera Modena, Italia.

Poster session at tetraplegia congress in **1999**.

Summary: 3 tetraplegia patients needing tendon transfers in hands were treated with Adcon-T/N around tendons (1st in July 1995): no adhesions in any of the patients and good ROM at 4 years, 1.6 years and 2 months post-op.

7. Comment améliorer la chirurgie des tendons de la main.

Merle M, Dautel G, Dumontier C.

Service de Chirurgie Plastique et Reconstructrice de l'Appareil Locomoteur au CHU de Nancy.

Review in French in Journal Français de l'Orthopédie: maîtrise orthopédique. **1998**.

Summary : extensive review of Adcon-T/N studies and why its use is advocated.

8. Peritendinous and perineural scar adhesions. Treatment with a new anti-adhesion barrier gel, Adcon-T/N.

Merle M, Foucher G, Egloff DV.

Service de Chirurgie Plastique et Reconstructrice de l'Appareil Locomoteur au
CHU de Nancy.

In : Hand Surgery, Rehart S, Zichner L, Thieme Stuttgart, **1997**, 33-40.

*Summary : excellent tolerance, absence of infections and allergies, absence of
tendon ruptures, better ROM than control population, most obvious in extensor
tendon tenolysis: better functional outcome and no ruptures. With Adcon-T/N
postop mobilisation could be postponed resulting in less pain for patient.*

9. A novel bioresorbable barrier gel (Adcon-T/N) for the inhibition of post-operative peritendinous adhesions: A clinical study in tenolysis procedures of the hand.

Raffoul W, Egloff DV.

Clinique Chirurgicale Permanence Longeraie and CHU Vaudois, Lausanne,
Switzerland.

Poster presentation at the 20th World Congress of the SICOT, Aug 19-23,
1996, Amsterdam, The Netherlands.

*Summary: retrospective, with control 32 cases of tenolysis procedures on
digits: significantly greater ROM in Adcon-T/N treated patients, no significant
adverse effects.*