Stoma Bags

AN HISTORICAL PERSPECTIVE FRANCESCA MARTIN AUCKLAND DHB



Introduction

- Development of stoma bags closely entwined with
 - Improved surgical techniques and stoma formation
 - Stomal Therapy as a nursing specialty
 - Ostomy patient networking
 - Innovative thinking and research to solve problems

Distant Past

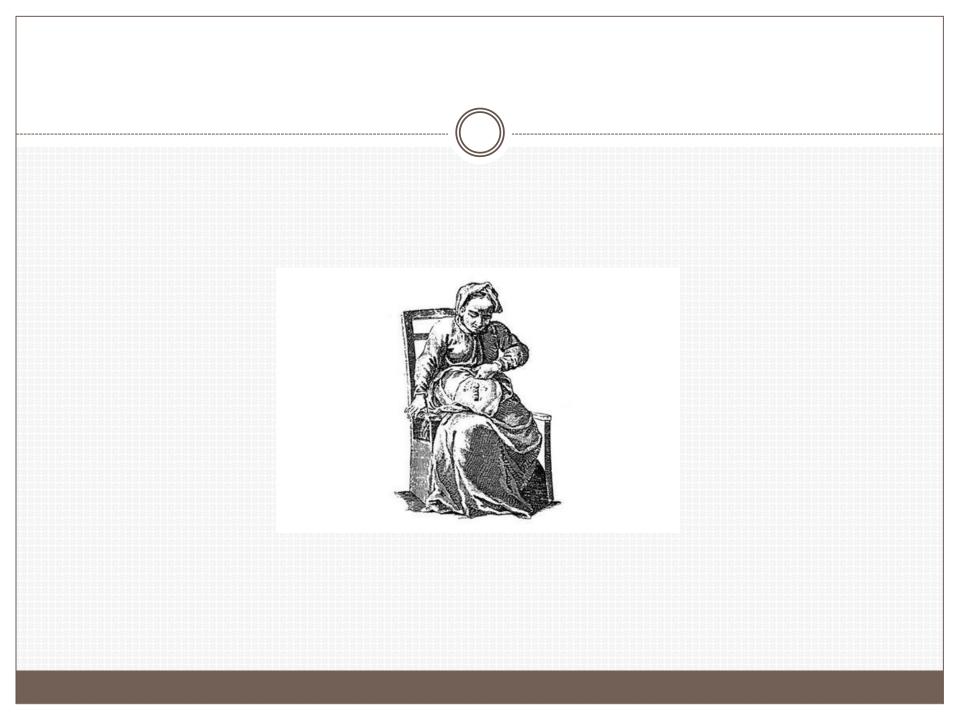
 Some recorded instances of bowel fistulas caused by battle wounds and abdominal trauma. No records of what was used to capture waste.

18th Century

- 1706 records of battlefield wounds causing a prolapsed colostomy.
- 1710 colostomy formed on baby with a birth defect. The stoma was placed on the side of the body rather than the front and a tin box was held in place over the stoma by straps. (1)

18th Century

- 1776 –first successful recorded stoma of large intestine for bowel obstruction.
 - Sponge attached to opening to absorb leakage with elastic bandage
- In future procedures leather pouches and glass bottles were used for waste management

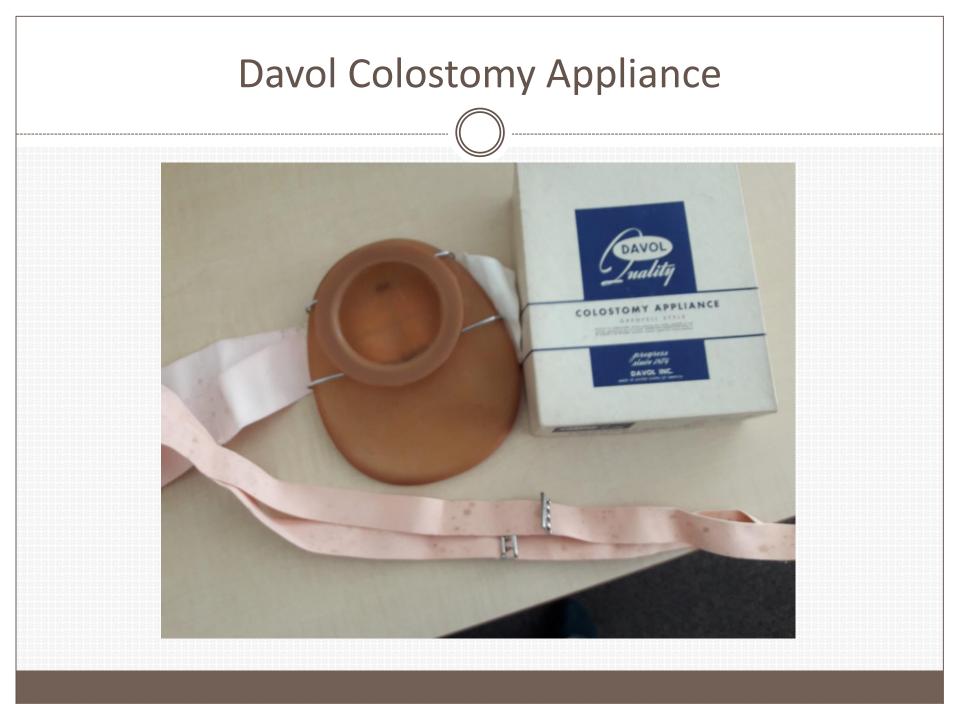


1920s

- 'Koenig-Rutzen' rubber pouch held in place with rubber cement was developed and used widely
- Koenig-Rutzen ileostomy pouch with a screw outlet is still on sale on Salts website for GBP36 GBP50

1920s - 1950s

- Davol Rubber Company made rubber pouches for colostomates – one of many small entrepreneurial ostomy companies.
- In the USA there were about 25 small ostomy companies prior to 1960
- Many of these companies were started by people who had a stoma themselves or a family member with one.
 (2)



Stomas

- Most stomas were colostomies until 20th century
- First reported ileostomy in 1879 on patient with malignant obstruction
- Ileostomies associated with high output, severe abdominal pain, severe skin breakdown and high mortality rates

Evolution of Ileostomies

- Dr Bryan Brooke 1952
 O Introduced the 'budded' stoma
- Dr Rupert Turnbull and Dr George Crile at Cleveland Clinic 1954
 - Reduction of complications and mortality associated with ileostomy construction (3)

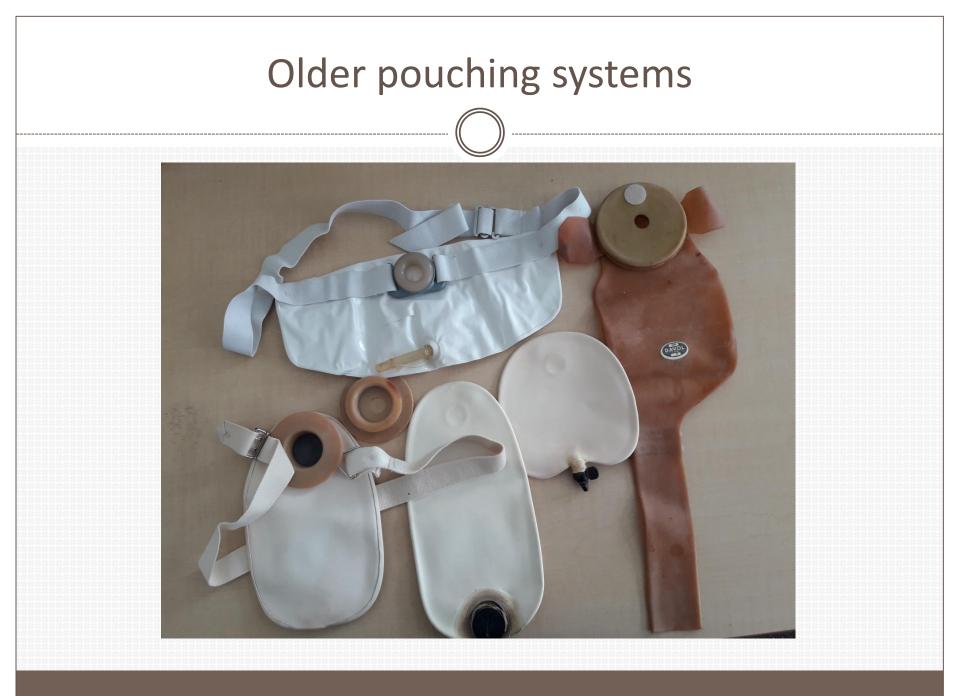
Development of Specialty

- Up to the 1950s/1960s ostomy patients isolated and left to manage stoma themselves with poor education and equipment
- 1958 Dr Turnbull at Cleveland Clinic appointed Norma N. Gill as first Enterostomal Therapist
- 1961 first training programme for Enterostomal Therapists set up at Cleveland Clinic
- 1962 founding of first Ostomy Association (4)

Development of pouching systems

• 1950s and 1960s

- More advanced abdominal surgery and stoma formation called for better pouching systems
- Urostomy formation required pouches with tight seals
- Various rubber pouches were used cumbersome and uncomfortable

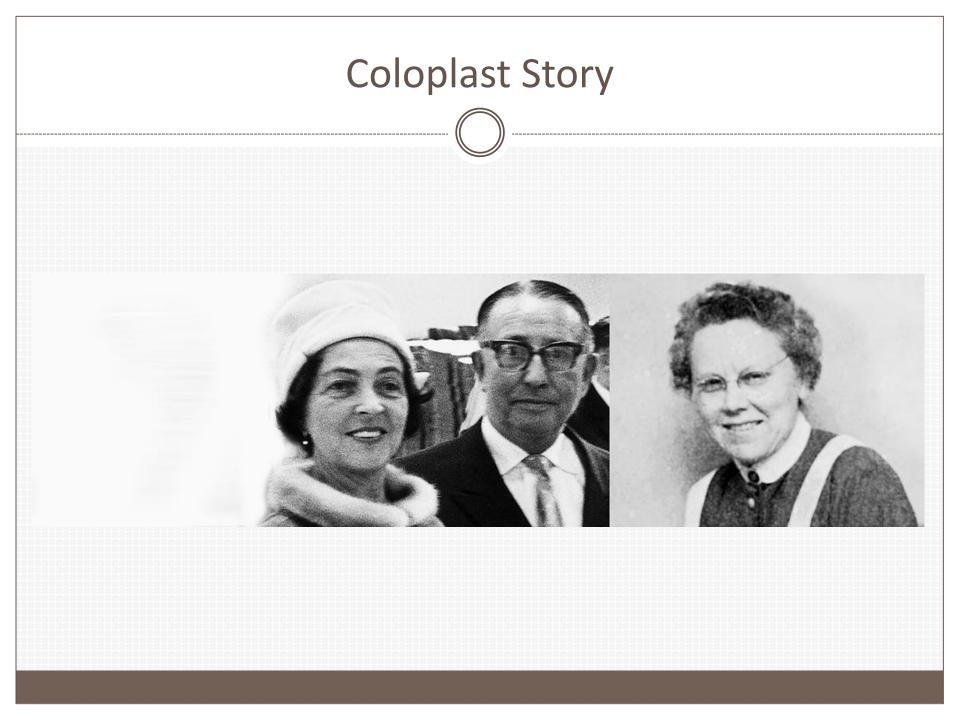


Coloplast

Denmark 1954

 Elise Sorensen, a nurse, had an idea for an ostomy pouch that would adhere after her sister had a colectomy and required a stoma.

 Elise approached Aage Louis-Hansen who at the urging of his wife Johanne created an adhesive ostomy bag. (5)



Development of Pouches

 1960s - companies in the USA started to develop vinyl semi disposable pouches – they lasted up to 12 weeks. Lighter and more comfortable than rubber pouches

• Two piece with face plate that attached to skin with adhesives

Tincture of Benzoin used for skin protection

1960s and 70s

- Skin barriers developed karaya washers and barriers
- PVDC odour proof films used by both Hollister and Coloplast
- Development of filters Coloplast introduced Filtrodor

Hydrocolloid

- Hydrocolloid medical adhesive developed in 1960s by Dr James Chen of E.R.Squibb & Sons for use in dentistry
- Hydrocolloid has ability to stick to warm moist surfaces
- Sir E.S.R Hughes, Colorectal surgeon, and Sr Elinor Kyte, Stoma Therapist, Melbourne, realised the uses of hydrocolloid for use with stomas

Hydrocolloid

- Adhesive material that has ability to absorb moisture
- Contains Pectin, Gelatine, Natrium Carboxy Methylcellulose, Polyisobutaleen
- Mixed with other ingredients for elasticity and flexibility

Hydrocolloid

- Introduction of 'Stomahesive' wafers by Squibb in 1972
- First hydrocolloid skin barrier
- Considered to be major development in ostomy industry
- Increased wear time of appliances from 1-2 days to 5-7days

1970s

- More sophisticated marketing
- Research study by Squibb showed comfort, security, odour management and convenience to be main concerns of patients and STNs
- Accessories added to ostomy range pouch deodorants, skin barrier wipes, karaya paste

ConvaTec

- 1978 Squibb introduced two piece product called Sur Fit Plus
- Squibb then created ConvaTec which concentrated on ostomy and wound care (6)

Hollister

- Printing company founded in 1921 by John Dickinson Schneider
- Evolved to manufacture of medical products
- In 1960s an employee approached John Schneider with an idea for ostomy products
- By 1970s was dominant in production of ostomy appliances in USA (7)

European Ostomy Companies

- Salts Healthcare Ltd founded in 1700 in the UK
- Dansac Founded in 1971 in Fredensborg, Denmark
- B. Braun (Germany) Biotrol started ostomy production in 1973, joined B.Braun 1992
- T.G.Eakin Ltd founded in 1974
- Welland Medical Ltd founded in 1988 in UK.

1980s

- Further developments of two piece ostomy systems by most companies
- Development of second generation hydrocolloid skin barriers – ConvaTec's Durahesive for urostomies
- Development of pastes
- Development of paediatric ostomy systems

1990s

- Pre cut stoma bags
- Improved locking systems for two piece appliances
- Increased comfort of pouches
- Convex inserts and convex pouches

2000 to present

- Greater sophistication of pouching systems
 - Improved air filters
 - Integrated closures
 - Fabric covered pouches
 - Greater range of convexity
 - More accessories such as seals, odour eliminators, skin barriers, adhesive removers
 - Lifestyle pouches smaller, lower profile, flexible barriers

Conclusion

- Pre 1960s having a stoma often led to social isolation, painful skin and poor quality of life
- In the years since Ostomy companies have developed more comfortable, reliable and longer lasting pouching systems to suit almost every ostomate.

The Ostomy companies

- have built up reliable distribution systems
- Asked their customers patients and nurses what they want
- Done research and development and used innovative thinking to solve issues
- Provided a huge range of products that are skin friendly, trustworthy and meet patients' needs

Ostomy companies have also

- Supported Stomal Therapy Nurses through education, funding of conferences, webinars and product training
- Supported ostomates through Ostomy Associations and enabled ostomates to compare and evaluate products for themselves
- $\circ\,$ Provided education packages for ostomates and their families

Ostomy Companies in NZ

Thank you to Coloplast ConvaTec Dansac Hollister Omnigon – B Braun, Eakin, Welland Salts For making our patients' lives better and our jobs easier.

References

1.Ostomy and Stoma Bags History. Available at: <u>https://www</u>.stomabags.com/blog/ostomy-and-ostomy-bags-history. Accessed 22 July 2018.

2.Davidson W, Fischer J, History of Ostomy Products Manufacturers in *Enterostomal Therapy Nursing. Growth and Evolution of a Nursing Specialty Worldwide.* Eds Erwin-Toth P, Krasner D, 2nd Edition. 2012 p.83

3. Doughty D, History of Stoma Creation and Surgical Advances in *Fecal and Urinary Diversions Management Principles.* Eds Colwell J, Goldberg M, Carmel J. p.9. Mosby 2004

4. d'E Stevens P, Development of Enerostomal Therapy as an International Nursing Specialty in *Enterostomal Therapy Nursing. Growth and Evolution of a Nursing Specialty Worldwide.* Eds Erwin-Toth P, Krasner D 2nd Edition. 2012 p.75

5. Available at https://www.coloplast.com/about-coloplast/history. Accessed 8 September 2018

6. 2.Davidson W, Fischer J, History of Ostomy Products Manufacturers in *Enterostomal Therapy Nursing. Growth and Evolution of a Nursing Specialty Worldwide.* Eds Erwin-Toth P, Krasner D, 2nd Edition. 2012 p.88

7.Ostomy Pouch History./Hollister U.S. Available at www.hollister .com/in/newslanding. Accessed 8 September 2018