Contents

Acknowledgements xvii

1 The Normal Vulva 1
   Normal Vulval Anatomy 1
   Normal Vulval and Vaginal Flora 4
   Further Reading 4
   Normal Anatomical Variants 4
   Normal Changes Over the Lifetime 6
      Childhood 6
      Pregnancy 6
      Menopause 6
   Further Reading 7

2 Taking a History and Examination 9
   Taking a History 9
      General Medical History 9
      Gynaecological History 10
      Dermatological History 10
      Vulval History 10
   Examination of the Vulva 11
   Further Reading 13

3 How to Take a Vulval Biopsy and the Importance of Clinico-Pathological Correlation 15
   Incisional Biopsy 16
   Fixation of the Biopsy 20
   Further Reading 21

4 Basic Histology of the Vulva 23
   Special Histological Stains 24
   Immunohistochemical Stains 26
   Other Tests 27
   Further Reading 28
## Contents

### 5 Investigations in Vulval Disease 29
- Investigations for Infection 29
  - Bacterial Swabs 29
  - Viral Swabs 29
  - Fungal Scrapings 29
  - Wood’s Light Examination 32
  - Serological Tests 32
- Investigations for Allergy 32
  - RAST Tests 32
  - Prick Tests 32
  - Patch Tests (see Chapter 9) 32
- Investigations for Inflammatory Disease 33
  - Direct Immunofluorescence 33
  - Indirect Immunofluorescence 34
- Imaging Investigations 34
- Useful Web Sites for Patient Information 34
- Further Reading 34

### 6 Topical Treatment in Vulval Disease 35
- Introduction 35
- General Principles 35
  - Lotions 35
  - Gels 36
  - Ointments 36
  - Creams 36
  - Pastes 36
- Topical Treatments Used for Vulval Disease 36
  - Emollient 37
  - Topical Steroids 38
    - Adverse Effects 38
    - Topical Steroids in Pregnancy 41
  - Antiseptics 41
  - Antibacterials 42
  - Antifungals 42
  - Barriers 42
  - Others 42
    - Podophyllotoxin 42
    - Imiquimod 42
    - Calcineurin Inhibitors 43
  - Tar 44
  - EMLA® 44
- Practice Points 44
- Further Reading 44
- Useful Web Sites for Patient Information 44

### 7 Symptoms in Vulval Disease 45
- Pruritis (Itch) 45
- Causes of Vulval Pruritis 46
Soreness 46
Pain 47
Dyspareunia 48
Discharge 48
No Symptoms 49
Useful Web Site for Patient Information 49

8 Signs in Vulval Disease 51
Differential Diagnosis Based on Appearance 51
Algorithms 51
Further Reading 56

9 Eczema, Allergy and the Vulva 57
Seborrhoeic Eczema 57
   Incidence 57
   Pathophysiology 57
   Symptoms 58
   Clinical Features 58
   Basic Management 58
   When to Refer 58
   Practice Points 59
   Further Reading 59
   Useful Web Sites for Patient Information 59
Allergic Contact Eczema / Dermatitis 59
   Introduction 59
   Incidence 59
   Pathophysiology 60
   Patch Testing (see Chapter 5) 60
   Symptoms 60
   Clinical Features 60
   Basic Management 60
   Who to Refer for Patch Testing 60
   Practice Points 61
   Further Reading 61
   Useful Web Sites for Patient Information 62
Irritant Eczema / Dermatitis 62
   Introduction 62
   Incidence 62
   Pathophysiology 63
   Histological Features 63
   Symptoms 63
   Clinical Features 63
   Basic Management 64
   When to Refer 64
   Practice Points 64
   Further Reading 64
Urticaria 64
### Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergic Contact Urticaria</td>
<td>64</td>
</tr>
<tr>
<td>Clinical Features</td>
<td>65</td>
</tr>
<tr>
<td>Management</td>
<td>65</td>
</tr>
<tr>
<td>References</td>
<td>65</td>
</tr>
<tr>
<td><strong>10 Psoriasis</strong></td>
<td>67</td>
</tr>
<tr>
<td>Introduction</td>
<td>67</td>
</tr>
<tr>
<td>Incidence</td>
<td>67</td>
</tr>
<tr>
<td>Pathophysiology</td>
<td>67</td>
</tr>
<tr>
<td>Histological Features</td>
<td>67</td>
</tr>
<tr>
<td>Symptoms</td>
<td>68</td>
</tr>
<tr>
<td>Clinical Features</td>
<td>68</td>
</tr>
<tr>
<td>Basic Management</td>
<td>69</td>
</tr>
<tr>
<td>When to Refer</td>
<td>72</td>
</tr>
<tr>
<td>Practice Points</td>
<td>73</td>
</tr>
<tr>
<td>Further Reading</td>
<td>73</td>
</tr>
<tr>
<td>Useful Web Sites for Patient Information</td>
<td>73</td>
</tr>
<tr>
<td><strong>11 Lichen Simplex</strong></td>
<td>75</td>
</tr>
<tr>
<td>Introduction</td>
<td>75</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>75</td>
</tr>
<tr>
<td>Incidence</td>
<td>75</td>
</tr>
<tr>
<td>Pathophysiology</td>
<td>75</td>
</tr>
<tr>
<td>Histological Features</td>
<td>76</td>
</tr>
<tr>
<td>Symptoms</td>
<td>76</td>
</tr>
<tr>
<td>Clinical Features</td>
<td>76</td>
</tr>
<tr>
<td>Basic Management</td>
<td>77</td>
</tr>
<tr>
<td>When to Refer</td>
<td>78</td>
</tr>
<tr>
<td>Practice Points</td>
<td>78</td>
</tr>
<tr>
<td>Further Reading</td>
<td>79</td>
</tr>
<tr>
<td>Useful Web Sites for Patient Information</td>
<td>79</td>
</tr>
<tr>
<td><strong>12 Lichen Sclerosus</strong></td>
<td>81</td>
</tr>
<tr>
<td>Introduction</td>
<td>81</td>
</tr>
<tr>
<td>Incidence</td>
<td>81</td>
</tr>
<tr>
<td>Pathophysiology</td>
<td>81</td>
</tr>
<tr>
<td>Genetic</td>
<td>82</td>
</tr>
<tr>
<td>Epigenetics</td>
<td>82</td>
</tr>
<tr>
<td>Autoimmunity</td>
<td>82</td>
</tr>
<tr>
<td>Hormonal Factors</td>
<td>82</td>
</tr>
<tr>
<td>Infection</td>
<td>82</td>
</tr>
<tr>
<td>Trauma</td>
<td>82</td>
</tr>
<tr>
<td>Role of the Skin Immune System</td>
<td>82</td>
</tr>
<tr>
<td>Histological Features</td>
<td>82</td>
</tr>
<tr>
<td>Symptoms</td>
<td>83</td>
</tr>
<tr>
<td>Clinical Features</td>
<td>83</td>
</tr>
<tr>
<td>Associated Disease</td>
<td>90</td>
</tr>
<tr>
<td>Risk of Malignancy</td>
<td>90</td>
</tr>
</tbody>
</table>
Basic Management 92
Follow Up 92
When to Refer 92
Practice Points 93
Further Reading 93
Useful Web Sites for Patient Information 93

13 Lichen Planus 95
Introduction 95
Epidemiology 95
Incidence 95
Pathophysiology 95
Histological Features 96
Clinical Features of Lichen Planus 96
Vulval Lichen Planus 98
Classic LP 98
Hypertrophic LP 98
Erosive LP 98
Risk of Malignancy 99
Basic Management 100
When to Refer 101
Practice Points 102
Further Reading 102
Useful Web Sites for Patient Information 102

14 Hidradenitis Suppurativa and Crohn’s Disease 103
Hidradenitis Suppurativa 103
Introduction 103
Epidemiology 103
Incidence 103
Pathophysiology 103
Histological Features 103
Symptoms 104
Clinical Features 104
Basic Management 105
Medical Management 105
Surgery 105
When to Refer 105
Practice Points 106
Further Reading 106
Useful Web Sites for Patient Information 106
Crohn's Disease 106
Introduction 106
Epidemiology 106
Pathophysiology 107
Histological Features 107
Symptoms 107
Clinical Features 107
15 Disorders of Pigmentation on the Vulva 111
Introduction 111
Postinflammatory Pigmentation 111
Post-Traumatic Pigmentation 111
Acanthosis Nigricans 111
Management 113
Melanosis 114
Pigmented Lesions 115
History and Examination 115
Other Techniques 116
Lentigines 116
Benign Naevi 116
Atypical Genital Naevi 117
Seborrhoeic Keratoses 117
Pigmented Basal Cell Carcinoma 118
Hypopigmentation 118
Vitiligo 118
When to Refer 119
Practice Points 119
Further Reading 119
Useful Web Sites for Patient Information 120

16 Other Dermatoses 121
Genetic Disorders 121
Hailey–Hailey Disease (Familial Benign Chronic Pemphigus) 121
Management 121
When to Refer 121
Practice Points 121
Further Reading 122
Useful Web Site for Patient Information 122
Auto-Immune Bullous Disease 123
Practice Points 126
Further Reading 126
Drug Eruptions 126
Fixed Drug Eruption 126
Common Drugs Causing a Fixed Drug Eruption 126
Further Reading 126
Useful Web Site for Patient Information 126
Stevens–Johnson Syndrome 127
Symptoms 127
Clinical Features 127
Contents

Toxic Epidermal Necrolysis 127
  Symptoms 127
  Clinical Features 127
  Basic Management 127
  Further Reading 128
  Useful Web Site for Patient Information 128

Manifestations of Underlying Disease 128
  Necrolytic Migratory Erythema 128
    Symptoms 129
    Clinical Features 129
    Basic Management 129
    Further Reading 129
  Acrodermatitis Enteropathica 129
    Clinical Features 129
    Basic Management 129
    Practice Point 130
    Further Reading 130

Inflammatory Ulcers 130
  Aphthous Ulcers 130
    Clinical Features 130
    Management 130
    Practice Point 130
  Behcet’s Syndrome 130
  Further Reading 132

Useful Resources 132
  Lipschutz Ulceration 132
    Clinical Features 132
    Basic Management 133
    Further Reading 133

Others 133
  Graft-Versus-Host Disease 133
  Further Reading 134
  Zoon’s Vulvitis (Plasma Cell Vulvitis) 134
    Histology 134
    Symptoms 134
    Clinical Features 135
    Basic Management 135
    Further Reading 135
  Vulvovaginal Adenosis 135
  Further Reading 135
  Langerhans Cell Histiocytosis 136
  Further Reading 136

17 Vulval Infection – Sexually Transmitted 137
  Normal Flora 137
  Trichomoniasis 137
  Pathophysiology 137
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Features</td>
<td>138</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>138</td>
</tr>
<tr>
<td>Basic Management</td>
<td>138</td>
</tr>
<tr>
<td>Further Reading</td>
<td>138</td>
</tr>
<tr>
<td>Useful Web Sites for Patient Information</td>
<td>138</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>139</td>
</tr>
<tr>
<td>Clinical Features</td>
<td>139</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>139</td>
</tr>
<tr>
<td>Treatment</td>
<td>139</td>
</tr>
<tr>
<td>Further Reading</td>
<td>139</td>
</tr>
<tr>
<td>Useful Web Site for Patient Information</td>
<td>139</td>
</tr>
<tr>
<td>Lymphogranuloma Venereum</td>
<td>139</td>
</tr>
<tr>
<td>Clinical Features</td>
<td>140</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>140</td>
</tr>
<tr>
<td>Treatment</td>
<td>140</td>
</tr>
<tr>
<td>Further Reading</td>
<td>140</td>
</tr>
<tr>
<td>Useful Web Sites for Patient Information</td>
<td>140</td>
</tr>
<tr>
<td>Gonorrhoea</td>
<td>140</td>
</tr>
<tr>
<td>Clinical Features</td>
<td>140</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>140</td>
</tr>
<tr>
<td>Treatment</td>
<td>141</td>
</tr>
<tr>
<td>Further Reading</td>
<td>141</td>
</tr>
<tr>
<td>Useful Web Sites for Patient Information</td>
<td>141</td>
</tr>
<tr>
<td>Syphilis</td>
<td>141</td>
</tr>
<tr>
<td>Pathophysiology</td>
<td>141</td>
</tr>
<tr>
<td>Clinical Features</td>
<td>141</td>
</tr>
<tr>
<td>Treatment</td>
<td>142</td>
</tr>
<tr>
<td>Further Reading</td>
<td>142</td>
</tr>
<tr>
<td>Useful Web Site for Patient Information</td>
<td>142</td>
</tr>
<tr>
<td>Chancroid</td>
<td>142</td>
</tr>
<tr>
<td>Pathophysiology</td>
<td>142</td>
</tr>
<tr>
<td>Clinical Features</td>
<td>143</td>
</tr>
<tr>
<td>Treatment</td>
<td>143</td>
</tr>
<tr>
<td>Further Reading</td>
<td>143</td>
</tr>
<tr>
<td>Useful Web Sites for Patient Information</td>
<td>143</td>
</tr>
<tr>
<td>Donovanosis (Granuloma Inguinale)</td>
<td>143</td>
</tr>
<tr>
<td>Clinical Features</td>
<td>143</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>143</td>
</tr>
<tr>
<td>Treatment</td>
<td>143</td>
</tr>
<tr>
<td>Further Reading</td>
<td>144</td>
</tr>
<tr>
<td>Useful Web Site for Patient Information</td>
<td>144</td>
</tr>
<tr>
<td>Herpes Simplex Infection</td>
<td>144</td>
</tr>
<tr>
<td>Incidence</td>
<td>144</td>
</tr>
<tr>
<td>Pathophysiology</td>
<td>144</td>
</tr>
<tr>
<td>Clinical Features</td>
<td>144</td>
</tr>
<tr>
<td>Differential Diagnosis</td>
<td>145</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>146</td>
</tr>
<tr>
<td>Basic Management</td>
<td>146</td>
</tr>
</tbody>
</table>
HSV Infection and Pregnancy 146
Further Reading 147
Useful Web Sites for Patient Information 147
Human Papillomavirus Infection 147
  Epidemiology 147
  Pathophysiology 148
  The Concept of Vulval Subclinical Lesion 148
Histology 148
Clinical Features 149
Diagnosis 149
Treatment 150
  HPV Vaccine 150
Genital Warts in Children 150
Further Reading 150
Useful Web Sites for Patient Information 150
Molluscum Contagiosum 150
  Symptoms 151
Clinical Appearance 151
Diagnosis 151
Treatment 151
Further Reading 152
Useful Web Site for Patient Information 152
Scabies 152
  Clinical Features 152
Diagnosis 152
Treatment 153
Further Reading 153
Useful Web Site for Patient Information 153
Pubic Lice 153
  Clinical Features 153
Treatment 153
Useful Web Site for Patient Information 153

18 Vulval Infection – Nonsexually Transmitted 155
Bacterial Infections 155
Bacterial Vaginosis 155
  Clinical Features 155
Diagnosis 155
Treatment 155
Further Reading 157
Useful Web Sites for Patient Information 157
Erythrasma 157
  Clinical Features 157
Differential Diagnosis 157
Diagnosis 158
Basic Management 158
Useful Web Site for Patient Information 158
Staphylococcal and Streptococcal Infections 158
Folliculitis 159  
Pathophysiology 159  
Clinical Features 159  
Diagnosis 159  
Basic Management 159  
Further Reading 159  
Bartholin Abscess 159  
Clinical Features 160  
Differential Diagnosis 160  
Basic Management 160  
Drainage of the Abscess 160  
Marsupialization 160  
Further Reading 160  
Other Staphylococcal Infections 161  
Toxic Shock Syndrome 161  
Staphylococcal Scalded Skin Syndrome 161  
Cellulitis 161  
Clinical Features 161  
Diagnosis 161  
Differential Diagnosis 161  
Other Streptococcal Infections 161  
Further Reading 162  
Vulvovaginal Candidiasis 162  
Pathophysiology 162  
Clinical Features 163  
Differential Diagnosis 163  
Diagnosis 164  
Treatment 164  
Further Reading 164  
Useful Web Sites for Patient Information 164  
Tinea Cruris 165  
Pathophysiology 165  
Clinical Features 165  
Differential Diagnosis 165  
Diagnosis 166  
Basic Management 166  
Further Reading 166  
Useful Web Site for Patient Information 166  
Viral Infections 166  
Varicella Zoster (Shingles) 166  
19 Vulval Intraepithelial Neoplasia 167  
Introduction 167  
Epidemiology 167  
Aetiology 168  
Prevention 168  
Histological Features 168  
Symptoms 169
Clinical Features 169
Management 173
Progression 174
Melanoma in situ 176
When to Refer 176
Practice Points 176
Further Reading 177
Useful Web Site for Patient Information 177

20 Extramammary Paget’s Disease 179
Introduction 179
Epidemiology 179
Histological Features 179
Classification 180
Symptoms 181
Clinical Features 181
Management 183
Recurrences 185
Progression 185
Follow Up 186
When to Refer 186
Practice Points 186
Further Reading 186
Useful Web Site for Patient Information 187

21 Vulval Squamous Cell Carcinoma 189
Introduction 189
Epidemiology 189
Aetiology / Histology 189
Symptoms and Clinical Features 190
Management 190
Surgery 190
Complications 191
Radiotherapy 192
Follow Up 193
Prognosis 193
When to Refer 193
Practice Points 193
Further Reading 194
Useful Web Site for Patient Information 194

22 Other Vulval Cancers 195
Basal Cell Carcinoma 195
Epidemiology 195
Incidence 195
Pathophysiology 195
Histological Features 195
Symptoms 196
23 Vulvodynia 201
Definition 201
Epidemiology 201
Pathophysiology 203
Psychological Aspects of Vulvodynia 203
Histology 204
Symptoms 204
Signs 204
Diagnosis 205
Management 205
Local Topical Pain Modifiers 205
Systemic Pain Modifiers 205
Physical Therapy 206
Psychosexual Therapy 207
Surgical Treatment 207
Further Reading 207
Useful Web Sites for Patient Information 207

24 Psychosexual Aspects of Vulval Disease 209
Clinical Psychological Assessment 210
Further Reading 210

25 Benign Lesions 211
Epidermoid Cysts 211
Comedones 211
Syringomata 211
Hidradenoma Papilliferum 213
Lymphangioma/Lymphangiectasia 214
Further Reading 214

Index 215