**Table S1: Characteristics of infections**

**Table S1A: Timeline of infections**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pat.No. | Months after surgery | | | | | | | | | | | | | | | | | | | | | | |
| OP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| #1 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #2 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #6 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #7 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #8 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #9 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #10 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #13 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #14 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #15 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #16 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #17 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #19 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #3 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #4 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #5 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #11 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #12 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |
| #18 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Infection free, post-surgery | | | | | | | | | | | | | | | | | | | | | | |
|  | antibiotic therapy | | | | | | | | | | | | | | | | | | | | | | |
|  | DBS electrode removal | | | | | | | | | | | | | | | | | | | | | | |
|  | Neurostimulator removal / connector cable removal | | | | | | | | | | | | | | | | | | | | | | |
|  | DBS electrode + neurostimulator removal | | | | | | | | | | | | | | | | | | | | | | |
|  | Infection, no DBS system removal, antibiotic therapy | | | | | | | | | | | | | | | | | | | | | | |
|  | Best medical treatment, before re-implantation | | | | | | | | | | | | | | | | | | | | | | |
|  | Re-implantation | | | | | | | | | | | | | | | | | | | | | | |
|  | Surgical revision | | | | | | | | | | | | | | | | | | | | | | |

**Table S1B: Individual information for infection cases**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Infection** | **Age/**  **Gender** | **OP**  **Duration (h)** | **LFP recording** | **Explant-ation** | **Pathogen** | **Antibiotic therapy** | **Reimplantation** | **IPG Location** |
| **#1** | first 3 months | 52/f | 07:25 | Yes | Neuro-stimulator | Staph. aureus | calculated antibiosis Vancomycin/Meropenem; Fosfomycin/Rifampicin until followed by Flucloxacillin for 6 weeks | after 1 year | abdominal |
| **#2** | first 3 months | 46/f | 10:00 | Yes | DBS leads | Staph. aureus | Ceftriaxon 1-0-1, Clindamycin 600mg 1-1-1, Fosfomycin 4000mg 1-1-1 for 12d, then Flucloxacillin/Metronidazole for 5d, followed by Moxifloxacin 400mg 0-0-1 for 14d | after 1 year | abdominal |
| **#6** | first 3 months | 49/f | 04:55 | Yes | DBS leads | St. lugdunensis | Fosfomycin 4mg/Rifampicin 600mg i.v./p.o. 2 weeks, Moxifloxacin 400mg/Rifampicin 600mg for 8 weeks | after 15 months | abdominal |
| **#7** | first 3 months | 58/f | 06:22 | Yes | DBS leads | Not available | Information not available | after 5 months | abdominal |
| **#8** | first 3 months | 56/m | 08:45 | Yes | - | No pathogen detection | Ampicillin/Sulbactam 3g 1-1-1 for 7 d | - | infraclavicular |
| **#9** | first 3 months | 69/m | 07:44 | Yes | Neuro-stimulator + DBS leads | Staph. aureus | acute calculated empiric therapy with Vancomycin, Meropenem, Flucloxacillin 2g i.v. 6 x/d, followed by Trimethoprim/sulfamethoxazole 960mg 2-2-2/Rifampicin 450mg 1-0-1 for 8 weeks | after 6 months | infraclavicular |
| **#10** | first 3 months | 56/f | 06:26 | Yes | Neuro-stimulator | No pathogen detection | Ampicillin/Sulbactam /Daptomycin 10d, Trimethoprim/sulfamethoxazole 960mg 1-1-1-0 until reimplantation | after 4 months | infraclavicular |
| **#13** | first 3 months | 31/f | 06:02 | No | Neuro-stimulator | Staph. aureus, Staph. capitis | Rifampicin, Ampicillin/Sulbactam i.v. for 10d, Ampicillin/Sulbactam 375mg 1-1-1, Rifampicin 600mg 1-0-0 for 7 d | no reimplantation | abdominal |
| **#14** | first 3 months | 74/f | 10:25 | No | Neuro-stimulator + DBS leads | No pathogen detection | Metronidazole, Fosfomycin, Ceftriaxon during inpatient stay; 2 months later impaired wound healing: Ampicillin/Sulbactam 750mg 1-0-1 for 2 weeks | no reimplantation | abdominal |
| **#15** | first 3 months | 48/m | 08:25 | No | Neuro-stimulator | Staph. aureus | calculated antibiosis Ceftriaxon, Metronidazole, followed by Flucloxacillin p.o. until 14d post-OP | no reimplantation | abdominal |
| **#16** | first 3 months | 29/f | 07:57 | No | Neuro-stimulator + DBS leads | Staph.aureus | calculated antibiosis Vancomycin/Meropenem, followed by Flucloxacillin during inpatient stay, 4 weeks Trimethoprim/sulfamethoxazole | no reimplantation | infraclavicular |
| **#17** | first 3 months | 56/m | 08:56 | No | Neuro-stimulator + DBS leads | Staph.aureus | Ampicillin/Sulbactam /Vancomycin i.v.7 d, Trimethoprim/Sulfamethoxazole 960mg 2-2-2-0, Rifampicin 600mg 1-0-1-0 p.o. for 6 weeks | after 1 year | infraclavicular |
| **#19** | first 3 months | 66/m | 06:16 | No | Neurostimulator + DBS leads | Staph. aureus | Initially i.v. Meropenem/Vancomyicin🡪 i.v. Flucloxacillin 2g/Fosfomycin 5g continued in Parkinson clinic | Planned | infraclavicular |
| **#3** | first 12 months | 57/m | 08:30 | Yes | Neuro-stimulator | St. epidermidis, St. lugdunensis | Ampicillin/Sulbactam 375mg | after 4 months | abdominal |
| **#4** | first 12 months | 60/m | 09:20 | Yes | Neuro-stimulator | St. epidermidis | Ampicillin/Sulbactam 375mg | no reimplantation | abdominal |
| **#5** | first 12 months | 54/f | 07:00 | Yes | Neuro-stimulator after 6 months; cables after 12 months | Staph. aureus | Clindamycin 600mg 1-1-1; after second operation: Vancomycin/Ciprofloxacin 7d, followed by Rifampicin/Ceftazidim 10 d | 10 months after 2nd OP | abdominal |
| **#11** | first 12 months | 65/m | 05:59 | No | Neuro-stimulator + DBS leads | Moraxella olensis, Strep. salivarius | acute calculated empiric therapy Vancomycin/Meropenem, after pathogen identification Ceftriaxon 2g i.v. 1-0-1-0, Trimethoprim/Sulfamethoxazole 960mg 2-0-2-0 for 3 weeks, followed by Moxifloxacin 400mg 1-0-0 for 3 weeks | after 2 months | infraclavicular |
| **#12** | first 12 months | 65/f | 06:50 | No | Neuro-stimulator + DBS leads | Proteus mirabilis | acute calculated empiric therapy Tazobactam i.v.; Ciprofloxacin/Trimethoprim/Sulfamethoxazole until reimplantation | after 4 months | abdominal |
| **#18** | first 12  months | 66/f | 05:18 | Yes | Connection cable, wound revision | Staphylococcus epidermidis | Post 1st revision: Acute calculated therapy 7d i.v. Ampicillin/Sulbactam, 7 d p.o. Sultamicillin 375mg 1-0-1  Post 2nd revision: i.v. therapy Vancomycin+Meropenem/Ampicillin/Sulbactam/Fosfomycin/rifampicin, then 3 months Doxycyclin 100mg 1-0-1 | Direct replacement | infraclavicular |